

AMERICAN FORESTRY

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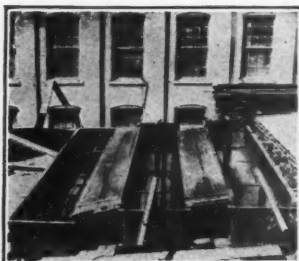
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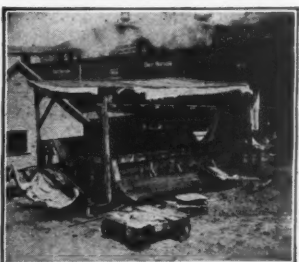
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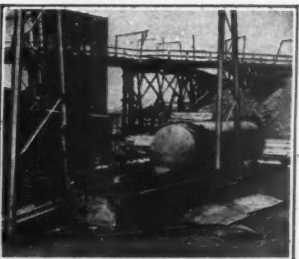
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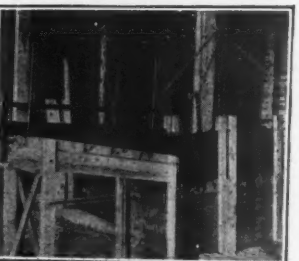
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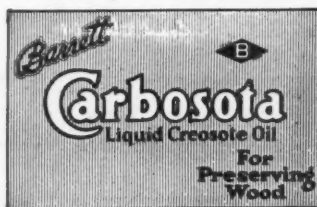
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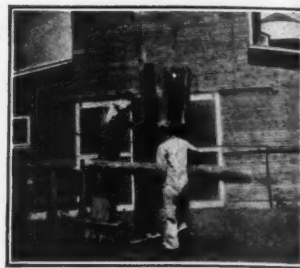
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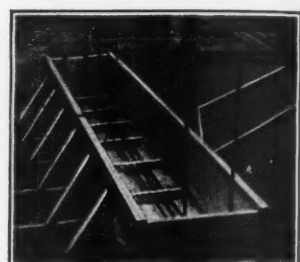
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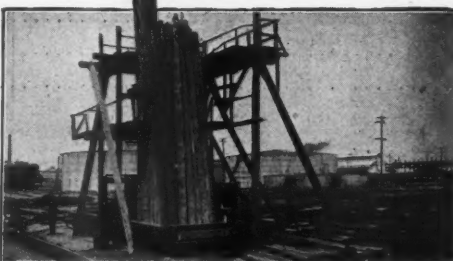
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AMERICAN FORESTRY

VOL. 27

JUNE, 1921

NO. 330

EDITORIAL

TWO FORESTRY BILLS

THE text of both the Snell-McCormick Bill and the Capper Bill for a forest policy is printed in this issue of AMERICAN FORESTRY for the information of the readers. Both of these bills are now before Congress and hearings will shortly be held by congressional committees.

The Snell-McCormick Bill is the measure approved by the United States Forest Service, the American Forestry Association, the National Forest Program Committee, and scores of other organizations. The Capper Bill is supported by the National Conservation Association.

BUSINESS INTERESTED IN FORESTRY

THE serious attention of business men from one end of the United States to the other is now to be given to forestry. The Chamber of Commerce of the United States has appointed a committee to study the problems of forestry. This will not be a perfunctory study. It will be a practical investigation of the conditions in every part of the country and a careful study of the problem of what shall be done to perpetuate our forests, to reforest waste land, and to provide for a supply of forest products for our future needs and to protect existing forests.

The committee, composed of able and experienced men, will perhaps first go to the Pacific Coast, where the bulk of the remaining timber of the United States is, and

make a detailed examination of conditions there. Later, other regions will be visited and similar investigations made. A meeting will be held in Chicago soon.

No more important development in forestry has occurred in some time than this interest of business men who, under the auspices of so powerful and influential an organization as the Chamber of Commerce of the United States, propose to learn for themselves facts about the forest conditions and help to solve the forest problems which are so serious. Whatever they decide to do will have a strong influence upon legislation, both state and national, and aid materially in getting the legislation which is so urgently needed.

TEXAS DEMANDS FORESTRY LAWS

TEXAS missed a chance, when its legislature was in session, to pass an excellent forestry bill. It was defeated by the lumbermen, who opposed it. Governor Neff has now called a special session of the legislature. It is expected that the forestry bill will come up again. It should pass. The people of the state desire it. The newspapers are demanding it, and its importance is emphasized by the Dallas Journal which says:

"A thoroughgoing bill for a start in the reforestation of Texas encountered stout objection when it was offered in the regular session. A similar bill, and no other would meet the need of the State, will encounter like objection upon every introduction. The best interests of Texas will be served if that opposition is met and overcome now. Every year of delay renders more difficult the task of saving the timbered domain of Texas for the uses of pos-

terity. Destruction of our forests proceeds at a rate which it will prove all but impossible to offset with the most intelligent and aggressive work in reforestation. The sooner a beginning is made the more effective will the work be. The objections of lumbermen to the proposed severance tax is based upon a selfishness that considers personal interests and today only, giving no thought to those who may come after, to the future needs of the State whose natural resources have enriched them, or to the obligations under which the right to these resources has put them. Public opinion, in its own behalf, should reinforce the efforts of the forestation forces when a new measure is submitted. If it voices itself strongly enough the opposition will throw down its hands and submit, as it should. Governor Neff should resubmit the forestry question and give public opinion a chance to make itself heard."

WOOD SHINGLES FROM BRITISH COLUMBIA

LAST year fifty thousand homes and buildings in the United States were roofed with cedar shingles which came all the way from British Columbia. We now rely on this well timbered Canadian province for one-seventh of all the wood shingles used in this country. It is indeed well for us that we have this outside source of supply, for it is estimated that the combined red cedar resources of our greatest shingle producing states, Washington and Oregon, amount to less than forty billion feet, which, if it were forced to fill all our shingle needs, would be entirely exhausted in less than eight years. The use of other woods, such as redwood, cypress, white cedar, pine and hemlock serves to reduce this drain on the red cedar supply, but unquestionably red cedar now stands pre-eminent among all shingle woods.

The Canadian Government has estimated that there is over seventy billion feet of good shingle cedar in the Province of British Columbia, nearly twice that remaining in our northwestern states. Until reforestation can begin to compensate for our own consumption we will grow each year more dependent upon British Columbia for shingles, or we must be prepared to pay much higher prices than ever before.

The proposal that shingles be made one of the articles to receive a high tariff will, if adopted, place squarely before everyone the present and immediate need of taking steps to conserve our forests. It will be a bitter pill to swallow, but one that should prove effective.

FORESTS AND HUMAN PROGRESS

WRITING under this title in the *Geographical Review*, Mr. Raphael Zon, of the United States Forest Service, discusses in considerable detail the effect of forests on the progress of civilization. He recognizes three stages in the relation of man to forest: (1) Civilization dominated by forests; (2) civilization overcoming the forests, and (3) civilization dominating forests. These three stages may exist simultaneously in different parts of the earth. Thus Central Africa and South America are still in the first stage, a considerable part of North America and Asia in the second, and Europe and parts of the United States in the third.

During the first stage forests constitute a serious obstacle to human settlement. It is a striking fact that practically all of the early civilizations originated in comparatively arid regions with little or no forest cover. In the old world this is well illustrated by the Egyptians, Babylonians, Assyrians, and Phoenicians, and in the new world by the Aztecs and the Incas. Everywhere the primeval forest has constituted one of the most formidable barriers to man's spread over the earth. Roman colonization halted when it reached the virgin forests of Central Europe, and these same forests later broke up the successive westward sweeps of the nomadic hordes of Huns, Magyars, and Avars. Penetration and clearing of the forest were alike difficult, and habitation in it in the early days of civilization was limited chiefly to individuals or to weak and primitive tribes which fled to it as a refuge.

Gradually, however, civilization advanced to the point where man was able to compete with the forest on even terms. With the development of improved tools, the more extensive use of fire, and the establishment of more permanent settlements, he was no longer completely dominated by the forest but began in turn to overcome it. Large areas were cleared for agriculture, as in the old "log rolling" days in Ohio and Indiana. Still larger areas were exploited for firewood, building materials, and other forest products. In Europe during the Middle

Ages many industries dependent on wood for fuel, such as metallurgy, glassmaking, and tanning, were located in or near the forest. During this stage penetration of the forests was facilitated first of all by rivers and small streams and later by trails, roads, and railroads.

Speaking generally, it may be said that up to a certain point as civilization has progressed the forest area has diminished. This process has in time led to the third stage, where the tables are completely turned and the forests are even more effectually dominated by man than he was formerly dominated by them. So absolute has been the conquest that in many parts of the world the forest has been exterminated beyond any possible chance of natural recovery. An extreme example of this is presented by Great Britain, where nearly 95 per cent of the original forest is now gone. Even in the United States we have left only 463 million acres of forest land out of the 822 million acres originally forested, and a large part of this is wholly or partially unproductive.

Yet this decrease in forest area has not been accompanied by a corresponding decrease in our requirements for wood. While other materials such as steel, iron, brick, and cement are partially taking the place of wood for certain purposes, additional quantities are being needed for other purposes and new uses for it are constantly being found. The annual consumption of pulpwood in the United States, for example, has increased in thirty years from 300,000 to 6,000,000 cords. In Great Britain the per capita consumption of lumber trebled in the sixty years from 1851 to 1911. Experience has shown that wood is one of the primary necessities of life and that there is a point beyond which further clearing of the forest is not only an economic waste but a hindrance to the progress of civilization itself.

Where this point has been passed a fourth stage in the relation of man to forests might, perhaps, be recognized and designated as "civilization restoring and improving the forests." Western Europe, where nearly all of the present forests are man-made, is already in this stage. In some places cleared areas are being planted

and everywhere steps are being taken to increase the productivity of the forest. Even England, which has hitherto been most backward in this respect, has recently adopted a comprehensive program for the planting of 1,700,000 acres. Is it not high time for the United States to adopt a similar policy and to pass from the stage of mere forest domination to that of forest restoration

and improvement? Already we are feeling the effects of forest neglect in depleted supplies and increased prices. Why not follow the dictates of common sense and justify our reputation for practicality by taking immediate steps to stop the present indiscriminate devastation of our forests and to provide for their perpetuation and increased production?

FORESTS AND STREAMFLOW

THE beneficial influence of forests upon streamflow in hilly and mountainous regions has long been recognized by foresters and other observers throughout the world. So general indeed has recognition of this influence become that, in order to safeguard their water supplies, many European countries have enacted legislation for the preservation of their mountain forests, and the United States has embarked on a program for the acquisition by the Federal Government of forest lands on the watersheds of navigable streams. There have, however, always been skeptics who have remained unconvinced by the theoretical considerations and general observations on which belief in the influence of the forest has been based. A striking answer to these skeptics is furnished by the recently published results of the streamflow investigation that has been under way since 1900 at the Swiss Forest Experiment Station.

This investigation was undertaken in order to settle beyond dispute just what, if any, influence was exerted by forests upon run-off in the mountains of Switzerland. Two small watersheds of 137 and 172 acres, the first of which was almost wholly forested and the other slightly less than one-third forested, were selected for the purpose. With the single exception of the forest cover, the two watersheds were strictly comparable in other respects, such as form, topography, geology, and climate. For eighteen years complete meteorological observations have been made and accurate records of run-off maintained in the two basins. These have yielded the most complete and convincing data yet available as to the precise part played by the forest in the regulation of streamflow. The conclusions established will, therefore, be received with the keenest interest and respect by all those interested in the problem.

The results show that the proportion of the yearly run-off to the total precipitation averaged practically the same, approximately 60 per cent in the two watersheds. The distribution of the run-off was, however, very different. In general the discharge of the stream from the well forested watershed was much more uniform than that from the poorly forested one, with higher minima and lower maxima. This difference is due to the greater absorptive capacity of the forest soil, resulting from its porosity and permeability, and not, as was formerly thought, from its humus cover. The latter can, it is true, retain a very large quantity of water, but it does not give this up readily to the underlying soil. In fact, a thick cover of raw humus and moss may, after it once becomes saturated, actually promote surface run-off and thus prevent the water from soaking into the soil.

The water from melting snow and from short, heavy downpours of rain was absorbed far more effectively by the soil of the well forested area than by that of the poorly forested one. Indeed the maximum discharge from the former after such rains was seldom more than one-third to one-half as much as from the latter. After prolonged rains the effect of the forest cover upon streamflow depended on the moisture content of the soil at the beginning of the rain. If the soil was comparatively dry at that time its effect in preventing surface run-off was quite noticeable, while if it was already thoroughly soaked there was little difference in the discharge of the two streams. Although the forest cover was thus unable to prevent all floods, equally heavy discharges from the well forested watershed did less damage than those from the other because their velocity was lower and they carried a smaller amount of eroded material. All of the differences noted would have been more pronounced had the well forested watershed not had steeper slopes than the other, and had the latter been completely deforested.

The prevailing view as to the effect of forests on streamflow is thus corroborated by the results of a carefully conducted and thoroughly scientific investigation. It will be most interesting to compare these results with those obtained from the very similar study now under way at Wagon Wheel Gap, Colorado. The clearing of the area took place a year ago, so that it will soon be possible to draw tentative conclusions.

Meanwhile, the results of the Swiss investigation will greatly strengthen the hands of those who are urging the protection of our mountain forests as a means of safeguarding our water supplies. While the precise relations determined to exist there are strictly applicable only to other areas with the same physical conditions, careful analysis of the factors concerned leaves no doubt that the demonstrated tendency of a forest cover in hilly countries to check surface run-off and to equalize streamflow is universal. Added strength is thus given to the policy of Federal acquisition of mountain forests, inaugurated nearly ten years ago by the passage of the Weeks Law. It is highly important that adequate funds should be appropriated for the enlargement of the areas already acquired. It is almost equally important that this policy should be supplemented by public control of all "protection forests." Experience both here and abroad has shown all too clearly that only in this way can the conservation of our water resources, one of our most valuable natural assets, be assured.

YOUR NATIONAL PARKS

BY STEPHEN T. MATHER

DIRECTOR, NATIONAL PARK SERVICE

THE National Parks belong to you as well as to all the American people; they are being developed to make them accessible to the greatest possible number of their owners. The best means of transit are provided for those who come by railroad and the way is smoothed for those who come by private motor car, by wagon, afoot or by horseback; hostelries are provided to fit every taste and purse. No longer has the person who has formerly made the scenic spots of Europe his choice an excuse for saying there are no adequate living facilities provided in the National Parks.

For the man who has learned the joy of the open road a welcome camp site is found in a National Park, where he may park his car and pitch his tent. Clear, cool, sparkling water and firewood are near at hand and sanitary facilities add to his comfort. In the larger camp grounds in the Yellowstone combined ranger stations and community centers are to be erected where the park rangers will furnish authentic information regarding the wonders and beauties of the park and where in the evenings the travelers from Maine to California and from Florida to Minnesota can gather around the open hearth fire in true community spirit.

A system of roads in each of the Parks spreads out before one, their scenic grandeur. Yellowstone has a complete road system; construction of a transmountain road, which will place Glacier Park on the direct line of the most northern of our transcontinental highways, will be started this year; the Fall River road, crossing the Continental Divide at an elevation of over 11,000 feet above sea level, was completed last year in Rocky Mountain National Park by the State of Colorado; work on the new Carbon River road in Mount Rainier, giving access to its wonderfully scenic northwest section, will be started this year; the Round-the-Rim road in Crater Lake Park gives fascinating glimpses of the marvelously blue waters lying 1,000 feet below; Yosemite has its Tioga road, giving a new approach to California from the East, and a new all-year road is soon to be constructed leading to its world-famed Valley; a new approach road to Giant Forest in Sequoia Park is to be hewn into the steep sides of the valley of the Middle Fork of Kaweah River below Moro Rock; and the Rim road, bordering the tremendous chasm of the Colorado is being widened and improved in Grand Canyon National Park. Zion in southwestern Utah, our newest National Park, is being made easily accessible for motor cars by the State.

The National Park-to-Park Highway links up the Parks in a grand circle tour with radiating highways stretching in each direction offering innumerable smaller circle trips to the motorist who has not time to complete the grand circle tour. The good roads movement everywhere is receiving added impetus through motor travel to the National Parks.

As the hotel has been developed to care for the train traveler, so will the public camp grounds be developed

for the motorist. Many cities and towns are already providing these camp grounds, vying with one another in offering the most attractive sites and the best conveniences. These camps have been found to have a definite economic value and the States have opportunity to further their broader development through the establishment of systems of State parks.

The Park road systems give access only to portions of the Parks and are like windows through which one can obtain a glimpse into nature's treasure houses. To those who desire to enter into the treasure houses and penetrate the fastnesses, easy trails that lure one stretch away. Afoot or on horseback, away from the beaten path, Nature reveals her innermost secrets. Glacier is essentially a trail Park; around the shores of Yellowstone Lake over Big Game Ridge the trail traveler is afforded an intimate view of Yellowstone's wild life; Yosemite offers over 600 miles of trails; in Grand Canyon a trail trip to Cataract Canyon affords an interesting study of the primitive life of the Havasupai Indians and exhibits a series of exceptionally beautiful waterfalls, and on the completion of the suspension bridge across the Colorado River in the bottom of Canyon, the north rim with its fine vegetation and magnificent stands of Yellow pine intermingled with groves of aspen will be open to trail travel.

The fisherman has not been neglected in the National Parks. Through cooperation with the Federal Bureau of Fisheries and the several State fish commissions fish hatcheries are maintained in a number of the Parks, and each year the Park streams are stocked with fish. The Parks are fast becoming famed for their excellent fishing.

A nature guide service has been inaugurated in Yosemite in cooperation with the State Fish and Game Commission, and children and adults are taught to read the trailside as they would an open book. A study of Nature's manifestations, as exhibited by geological formations and geyser action, is conducted also in Yellowstone. Through co-operation with the Bureau of American Ethnology the cliff dwellings and ancient temples of pre-historic people in the Mesa Verde are being revealed by excavation and restoration.

In the elimination of private holdings from the Parks an opportunity for splendid giving exists for generous public-spirited citizens and organizations. In this manner many giant trees in Sequoia Park that were in imminent danger of destruction have already been preserved to the people for all time. Opportunities for this public-spirited work are many and widespread, Yellowstone being the only National Park where no private holdings have ever existed.

Know your National Parks.

Through intimate association with Nature, exemplified in the highest degree in our National Parks, new inspiration and ideals are formed, tired bodies are refreshed, health restored and joy in living is assured.

The National Parks welcome you.

UNFAMILIAR SCENES IN NATIONAL PARKS

BY HERBERT W. GLEASON

“WHY do you keep speaking about the ‘National Parks’? I didn’t know there was more than one.”

Such was the remark to the writer by a man of unusual intelligence, who although he was well informed as to many matters of public importance, had somehow overlooked the development of the national park system of this country. It was a genuine surprise to him to be told that there were no less than nineteen national parks already created, with several more in prospect, besides thirty-six national monuments which are also, in effect, national parks.

It should be said, however, in all fairness that not until within the past four years, since the establishment of the National Park Service, has there been any thorough and systematic effort made to acquaint the public in general with the facts regarding our national parks. Before that time it was left almost wholly to the railroads to advertise the national parks; and as their object was chiefly financial profit, each railroad was concerned to advertise only the one or two parks within reach of its own line. A new era of information and development succeeded the inauguration of the National Park Service,



Courtesy of National Park Service

A NATIONAL PARK IN THE EAST

Popular impression is that all the National Parks are in the West, but here is a view in Lafayette National Park, in Maine. The tourists are standing on Summit Beach Cliff, from the top of which there is a view well worth the climb.

And it is to be feared that this is not a solitary instance of lack of knowledge. Only recently the writer was addressing a large audience of cultivated New England people, and asked how many of those present knew the location of Lafayette National Park. Not a single hand was raised in reply. Yet Lafayette Park is the only national park in New England; its origin, in the gifts of land by public-spirited residents of Mt. Desert Island off the coast of Maine, and its creation by act of Congress had been duly noted in the public press, and various periodicals had reproduced numerous illustrations of its scenic beauty.

and the past four years have witnessed an amazing progress in both of these directions. In fact, as a direct result of the propaganda issued by the Service and the efforts put forth to make the parks more readily accessible, our national park system has come to hold a large place in the estimation of the public, and the number of visitors annually has increased beyond all expectation. The following figures taken from the last report of the Director of the National Park Service, giving the amounts appropriated by Congress for several of the larger parks in 1916 and again in 1921, and the number of visitors to the same parks in 1916 and in 1920, are highly suggestive:



GRAND TETON, YELLOWSTONE PARK

A view of this majestic mountain range from Jenny Lake. Its altitude is 13,747 feet.

Right here it should be said that a large share of the credit for this notable advance is due personally to the Director of the National Park Service, Hon. Stephen T. Mather, who has not only given to it his best thought and constant energy, but has many times drawn heavily upon his private funds to meet financial needs for which Congress had made insufficient appropriation.

	Appropriations		Number of Visitors	
	1916	1921	1916	1920
Yellowstone Park.....	\$8,500	\$350,000	35,849	79,777
Sequoia Park.....	15,550	86,000	10,780	31,508
Yosemite Park.....	75,000	300,000	33,390	68,906
Mt. Rainier Park.....	30,000	150,000	23,989	56,491
Crater Lake Park.....	8,000	25,300	12,265	20,135
Rocky Mountain Park....	8,000	65,000	51,000	240,966
Grand Canyon Park.....		100,000		66,500
Glacier Park.....	75,000	195,000	12,839	22,449
Private automobiles entering the parks.....			29,358	128,074
Total number of visitors to all the parks.....			356,097	919,504

Readers of *American Forestry*—it goes without saying—are well informed upon all these matters. But there are many features of national parks which have not been

exploited by the railroads, and to which even the folders issued by the National Park Service have given slight attention, which are worth emphasizing. It has been the good fortune of the writer during the past twenty years to visit nearly all of the national parks and monuments, — in many cases repeatedly, — and to secure a very extensive series of original photographs illustrating, not merely scenes along the ordinary routes of travel, but many subjects quite aside from those routes. The question is often asked, "What is the best method of touring the national parks?" That depends largely upon the tourist and also upon the particular park visited. In general, however, it may be said that one will gain the greatest amount of satisfaction, in visiting any park, by going entirely independent of any party or time schedule. Wherever possible, a walking trip is to be recommended in preference to traveling by automobile or on horseback. This will allow the tourist opportunity not only to enjoy to the full all the more conspicuous features of the park, but will enable him to make numerous side trips to localities off the beaten line of travel, and many times he will find these side trips peculiarly rewarding.

In Yellowstone Park, owing to the long distances which intervene between the major points of interest, walking through the park is not to be advised except for those



Photograph by Herbert W. Gleason

A FIELD OF AVALANCHE LILIES

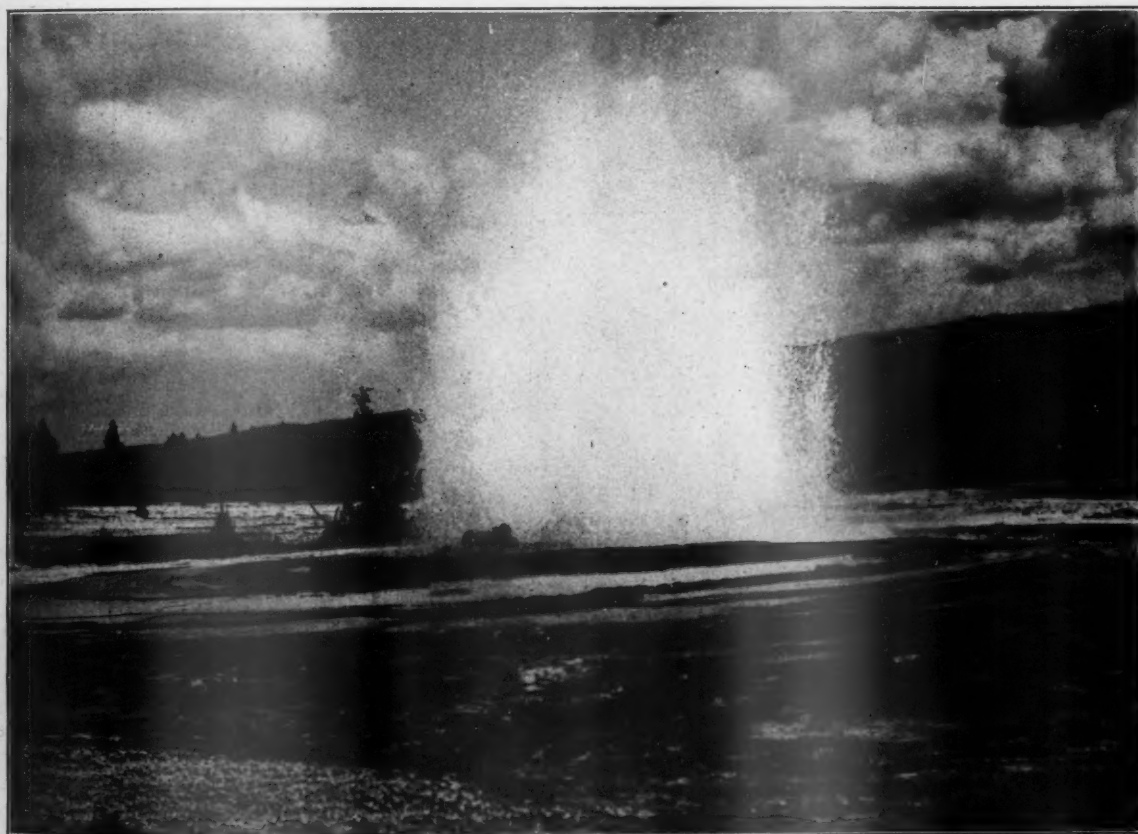
In many places in Mt. Rainier Park these beautiful flower clothed fields are seen where avalanches have swept the ground free of trees and given grass and flowers a chance to grow.



Photograph by Herbert W. Gleason

SUNSET ON THE TETON MOUNTAINS

In the foreground is Jackson Lake, a large body of water in a section which it is now proposed to set aside as an extension to Yellowstone Park. In the background are the famous Teton Mountains.



Photograph by Herbert W. Gleason

THE JEWEL GEYSER, YELLOWSTONE NATIONAL PARK

While this geyser is not as well known as some of the others, it has a beauty and a majesty which should attract every tourist to the Yellowstone to it.

who have an abundance of time on their hands and who possess exceptional physical energy. The ideal way to see the Yellowstone is by private conveyance, with camping outfit, allowing for indefinite stops whenever desired. That this method is becoming increasingly popular is shown by the fact that last year nearly 14,000 private automobile parties made the tour of the park—four times the number that were recorded in 1916.

Yellowstone Park has been so thoroughly mapped out, and its chief scenic features made so accessible, that one finds sufficient to occupy his attention in following the regular itinerary without attempt at deviation. But it is well, even with guide-book in hand, to note many of the less conspicuous features. In visiting the geysers, for example, do not give the entire time to "Old Faithful," the "Grand," the "Riverside," but seek out some of the smaller geysers. These are not so spectacular, but each one possesses a peculiar beauty of its own. The little "Jewel" geyser, which plays frequently, is one of the most exquisitely beautiful objects in the park. It derives its name from the fact that the column of water thrown into the air seems to explode into millions of shining drops, which fall back as veritable jewels. So among

the countless hot springs, boiling pools, travertine terraces, etc., without discounting the impressiveness of the major sights, one may often find lesser phenomena which are real gems of beauty. Even at the Grand Canyon,—that climax of the glory and wonder of the park,—do not be content to view it from the regulation points and in broad daylight alone. Visit it by moonlight, and catch something of the profound mystery which seems to envelop it. Or summon all your "early morning courage" and view the Canyon from the brink of the Great Falls at sunrise, when the mists rising from the streams are contending with the sunlight for the possession of the Canyon: you will find the sight well worth a five-o'clock-in-the-morning venture. And be sure and climb one of the higher mountains of the park. Electric Peak is the highest and the most difficult to climb, but the view from Mt. Washburn is quite as fine—some think even finer—and you can ride to the summit of Mt. Washburn in an automobile, if you choose. Arriving there, after you have taken in to your utmost capacity the magnificent panorama spread around you, look down at your feet and behold the wealth of floral beauty which flourishes there at 10,000 feet above the sea. These are all alpine



Photograph by Fred H. Kiser

A PARK HOTEL IN THE SHADOW OF THE MIGHTY MOUNTAINS

Right at the foot of formidable Mt. McDermott, and on the shore of the lake of the same name in Glacier National Park, is situated Many Glacier Hotel, where the tourist may have every comfort he has in big eastern hotels, while the boundless West is just outside.



Photograph by Herbert W. Gleason

ST. MARY'S LAKE, IN GLACIER PARK

From Lily Bay on one side of this beautiful lake are seen the great mountain peaks in the distance, with numerous glaciers cutting furrows of white down their rocky sides.

plants, and even if you possess nothing of the botanist's technical knowledge, you cannot help but rejoice in the abundance, the variety, and the richness of color of these courageous mountain-top dwellers.

In visiting Yellowstone Park one should not fail to make a trip to Jackson Lake and the Grand Teton Mountains. These are some forty miles south of Yellowstone Lake, in a region which it is proposed to incorporate within the park limits at the earliest possible date, and where is to be found some of the sublimest mountain scenery along the entire stretch of the Rockies.

Glacier Park, in Montana, affords opportunity for an ideal walking trip, as the public camps are located at points easily reached from one day to another, and an ordinary "hiker" can cover the distances without undue exertion. This refers to the regularly scheduled "tour" of the park. The entire northern portion of Glacier Park is as yet very deficient in trails, and to attempt an exploration of this portion of the park would be an exceedingly strenuous and somewhat hazardous undertaking. The trails already completed, however, reach some of the most attractive localities in the park and furnish enjoyment enough to satisfy the most ardent seeker after the grand and beautiful in nature.

With a large part of Glacier Park decidedly "unfamiliar," it would be easy to select numberless instances of

scenic beauty to fulfill the purpose of this article; but reference will be made only to points within reach of the usual course of travel. St. Mary's Lake, as seen from the chalet at the foot of the lake or from Going-to-the-Sun Camp, is familiar to every visitor; but comparatively few attempt to cultivate a more intimate acquaintance with the lake than can be gained from these two points. A boating trip upon the lake, exploring its various bays and coves, is most earnestly recommended, not only for the delightfulness of the trip itself, but for the new views of the surrounding mountains which take on wholly different aspects and reveal unsuspected beauty as they are seen from different points on the lake. The same is true of Lake McDermott, the terminus of the automobile trip from the eastern entrance of the park. This last-named lake is the central point of a region which abounds in opportunities for short excursions. The most interesting of these is that which takes the visitor to Iceberg Lake, distant some seven miles, where a small glacier, nestling in the lap of a rocky amphitheatre whose vertical cliffs rise two thousand feet above the beholder, descends into an alpine lake and breaks off into miniature icebergs which float around the lake. Along the stream which forms the outlet of this lake there is a whole series of jubilant cascades, the most beautiful of which is that called the "Silver Stairs," slightly off

the main trail. One should also not fail to note the wealth of wild flowers which are found in close proximity to Iceberg Lake.

The Continental Divide extends through the middle of Glacier Park, from northwest to southeast, and in crossing this divide there are several passes which have been taken advantage of by the trail-makers. Among these are Dawson Pass, Red Eagle Pass, Gunsight Pass, Logan Pass, Piegan Pass and Swift Current Pass. Of these Gunsight Pass is the one most frequently traveled, while Swiftcurrent Pass is perhaps scenically the most impressive. "Granite Park," which lies on the western slope of the last-named pass, is one of the most charming localities in the entire park and deserves to be more widely known and appreciated.

withstanding this throng of visitors, the greater portion of the park is a closed book except to a few adventurers who, on foot or on horseback, have sought out the remoter localities and brought back word of their surpassing grandeur. The village of Estes Park, long famous as a summer resort, is the main entrance to the park, and from here roads and trails radiate in various directions. Naturally, the greater number of visitors put up at the hotels in Estes Park; but excellent accommodations can be had at several places—more remote but also far more picturesque—within the park bounds. And it is from these latter places that the "unfamiliar" scenes are most readily reached.

Of course, the chief attraction of Rocky Mountain Park is the rugged and majestic mountain scenery, which



Photograph by Wiswall Bros.

SNOW WATERS OF THREE GLACIERS

The front range at Bierstadt Lake, Rocky Mountain Park, Colorado, eighty-five miles from Denver. From left to right appear Flattop Mountain, Tyndall Glacier, Hallett Peak, Otis Peak and Andrews Glacier.

There is a third national park along the Rocky Mountain range, created only a few years ago, but which has already far outstripped, in point of patronage, all of the older national parks,—the Rocky Mountain Park, in Colorado. No other park is so quickly accessible from a large center of population, and the splendid roads which lead to the park from Denver—sixty miles distant,—are exceedingly popular with automobilists. Yet not-

culminates in Long's Peak—14,255 feet above sea level,—while there are no less than 15 other peaks having an altitude exceeding 12,000 feet. Associated with these peaks there are several small glaciers and a great number of charming alpine lakes. Some of these, like Bluebird Lake, Dream Lake, Odessa Lake, Fern Lake, and Loch Vale, are close up under the Continental Divide, perched high on the shoulders of the range and offering not only

rare beauty in themselves but glorious outlooks over the surrounding country to all who succeed in reaching them. As for the wild life of the park, both animal and floral, one finds this a source of never-ending interest. Mountain sheep, elk, and deer are frequently seen, while the industrious beaver and their works are in abundant evidence. To describe the wild flowers would require a volume.

Colorado is also fortunate in possessing still another national park of unique interest,—Mesa Verde Park, in the southwestern corner of the state. This park in its entirety may be classed as "unfamiliar," for it is a long way from the routes of transcontinental travel and is reached only by a narrow gauge railroad whose "limited" trains—limited as to speed!—consume a generous amount

down the opposite wall of the canyon, in a niche protected by the overhanging cliff, a whole village of stone buildings, curious in design and partly in ruins. Coming to another canyon you find a similar village, only much larger, and in another canyon still another, and you are told that the park abounds in antiquities of the same sort. These are the cliff-dwellings of a people whose whole history is shrouded in mystery. Who they were, where they came from, how long they lived here, why they left, and where they went to,—these are questions as yet unanswered. They belonged to the Stone Age, having no knowledge of metal implements, yet they possessed a marvelous constructive skill; while the profusion of relics found in the ruins show that in the making of pottery and fabrics of various kinds they had a considerable degree of



Photograph by George L. Beam THE COUNTRY OF THE CLIFF DWELLERS

Here the housing problem of centuries ago was solved by excavating homes in the cliffs. The view is looking northward from Inspiration Point, in the Mesa Verde National Park. At the left is the Sun Temple, and at the right the Cliff Palace.

of time in reaching their destination. With the improvement of the highways in this section of the state there will be a very great increase in automobile travel.

Imagine yourself journeying over a high plateau covered with scrub pine and juniper, with not a vestige or suggestion of human habitation for a dozen miles or more, when suddenly you come to the brink of a canyon deeply countersunk in the plateau, and discover, half way

artistic appreciation. Some of their patterns and designs go back to early Grecian and Egyptian times. How did they get them? All these evidences of a prehistoric civilization are of absorbing interest, and when Mesa Verde Park becomes more readily accessible it will prove to be one of the most popular objectives in national park excursions, because of its many unique features.



Courtesy of National Park Service

LASSEN PEAK IN ERUPTION

This volcano, which has been intermittently active in the last few years, is now in the Lassen Volcanic National Park, and preserved for the public.

Passing over to the Pacific Coast, Mt. Rainier National Park, in the state of Washington, is rapidly becoming familiar to the residents of Seattle, Tacoma, and other cities of the neighborhood, owing to the excellent system of roads recently completed, which allow automobiles to reach a point high up among the glaciers of Mt. Rainier. This mountain, an extinct volcano, is really the king of all the noble peaks which stand guard along the Pacific Coast, and its entire altitude—14,408 feet—can be seen from sea level. It stands in the center of the park, and from its summit there radiates a stupendous glacier-system composed of no less than twenty-eight different ice-streams, some of which are five to six miles in length, while their precipitous descent gives rise in many places to enormous groups of seracs and ice-cascades.

Mt. Rainier is surrounded with a series of the most lovely natural parks, whose verdure has caused the mountain to be likened to a magnificent diamond in a setting of emeralds. Paradise Park, on the southern slope of the mountain, is the only one accessible to automobiles, all the rest being reached only on foot or with saddle-horses and pack train. A wonderful trail has recently been constructed which entirely encircles the mountain, and

while of necessity it is sometimes compelled to follow the lower levels it frequently reaches points of exalted vision and opens up localities which were hitherto practically unknown.

A trip over this trail is one of the most delightful mountain excursions imaginable, and although portions of it are rather rough it is abundantly rewarding. It usually requires seven or eight days to make the round trip from Paradise Park, but more time should be taken if possible, in order to allow for certain side trips off the main trail. There are no sources of supply along the route, and hence everything in the way of food, bedding, shelter tents, etc., should be provided at the outset.

The wild flowers of Mt. Rainier Park, in their profusion, novelty, variety, and depth of color, compel admiration from even the most indifferent beholder. Over four hundred species have been noted at Paradise Park, some of which—such as the avalanche lilies, mountain anemones, and lupines—literally cover acres of ground when in full bloom.

In southern Oregon there was formerly a mountain much higher even than Mt. Rainier; but there came a sad day in its history, when the whole top of the mountain was either blown off in some terrific cataclysm



Photograph by Herbert W. Gleason

ALONG THE CASTLE CLIFFS

Here, ages ago, was a great volcano, which either blew off its head or caved into its own fiery depths. Where once was a seething furnace is now beautiful Crater Lake.

—for it was a volcano, like Mt. Rainier,—or else it was engulfed in its own volcanic caverns. Today on the summit of the mountain, known as Mt. Mazama, there is an immense crater, six miles in diameter, within which is found one of the most remarkable lakes on the face of the earth. This lake has a maximum depth of 2,000 feet, and the enclosing cliffs which are absolutely vertical in many places rise to a maximum height above the lake of 2,000 feet. The color of the lake is an intense ultramarine blue, shading into green along the shore, while the cliffs, being of volcanic rock, exhibit a color-scheme hardly less varied and brilliant than that of the Yellowstone Canyon. This is the dominant feature of Crater Lake National Park, and it is well worth crossing the continent to see.

An automobile road, thirty-five miles in length, encircles the lake, following the rim wherever possible, and affording many superb views of the lake and the surrounding country. The crater walls are so steep that it is possible to reach the shore of the lake only at two or three points, but a good trail has been built leading down from the south rim, and one can enjoy boating and fishing on the lake very readily.

The park also contains several other volcanic cones and a number of creek canyons which are exceptionally interesting. Of the latter, Anna Creek Canyon is nota-



Photograph by Herbert W. Gleason

THE WHITE CASCADES

This torrent of water pours down the grand canyon of the Tuolumne, in Yosemite Park, and is one of the beauty spots in that famous region.

ble for the groups of lofty sand pinnacles which it contains,—curious and fantastic forms created by centuries of erosion. As a whole, Crater Lake Park is rapidly coming to be recognized as one of the most priceless assets of the nation in the realm of natural wonder and beauty.

California has four national parks,—Yosemite, Lassen Volcanic, Sequoia, and General Grant. The two last were established for the purpose of preserving a number of groves of the famous Big Trees, *Sequoia gigantea*. Lassen Volcanic Park contains Mt. Lassen (10,465 ft.), the only active volcano in the United States proper, besides various subsidiary volcanic phenomena. Yosemite Park is much the largest, having an area of 1,125 square miles, and including some of the grandest and most beautiful scenery on the continent.

Yosemite Valley, world-famous for many years, is unquestionably the chief outstanding feature of Yosemite Park; but there are within the park a number of other localities which, as they become better known, will make Yosemite a rival in popular favor with any other national park on the list. Tuolumne Meadows—the most wonderful camping-ground in the way of climate and scenic attractions in America; the Sierra Crown—a group of lofty snow-clad peaks centering about Mt. Lyell (13,090



Photograph by Herbert W. Gleason

YOSEMITE VALLEY

Just as beautiful with its covering of white in winter as in its summer green is the famous Yosemite Valley.

ft.); the Grand Canyon of the Tuolumne River—a mighty gorge, twenty-two miles in length, with cliffs rising from four to five thousand feet sheer on either hand, and with a magnificent succession of waterfalls and cascades throughout its entire extent; the region about Mt. Dana and Mono Pass; the Mariposa, Tuolumne, and Merced groves of Sequoias; Mt. Hoffman and Tenaya Lake; Benson, Rogers, and Tilden Lakes in the northern portion of the park; Hetch Hetchy Valley—alas! its glory is departed,—these are some of the “unfamiliar” features of Yosemite Park which will some day be appreciated at their full value.

up Conness Creek to Mt. Conness and possibly as far as Rogers Lake, down the Tuolumne Canyon at least as far as the Waterwheel Falls, and finally returning to Yosemite Valley via the Tioga Road and the trail leading down by the side of Yosemite Falls. Having made this trip once, you will not be satisfied until you have made it again—and yet again,—and then you will realize that you have seen only a small portion of Yosemite Park.

But California is not yet satisfied. It has still two more parks on its “waiting list” which it wishes to dedicate to “the benefit and the enjoyment of the people.” One of these is the Redwoods National Park, in the northern



Photograph by Pillsbury

THE GATES OF THE YOSEMITE

The entrance to this wonderful Park in California gives the visitor an appreciation of the magnificent scenic effects which will meet his eye when he is in the Park. To the left is seen the majesty of El Capitan, and to the right the heights of Cathedral Rocks and the sheer beauty of Bridal Veil Falls, while the Merced River flows in the foreground.

To arrive at a reasonable familiarity with Yosemite Park one should plan an excursion for at least a month's duration. First, devote several days to Yosemite Valley and the Mariposa Grove of Big Trees. Then follow the Sunrise Trail past Merced Canyon and Cathedral Peak to the Tuolumne Meadows, making headquarters at Soda Springs for two or three weeks. From this point make separate trips as convenient to Dog Lake and Delaney Meadows, up Lyell Fork to Mt. Lyell, up the Tioga Road to Mt. Dana, over Mono Pass and down Bloody Canyon to Mono Lake and return via Leevining Canyon,

portion of the state, designed to conserve the last remaining forest of the noble Coast Redwood (*Sequoia sempervirens*), and the other is the Roosevelt National Park, in southern California, proposed as a fitting memorial to the late ex-President Theodore Roosevelt. The last-named park will include the present Sequoia Park and in addition over one thousand square miles of mountainous country lying along the crest and the western slope of the Sierra Nevada, culminating in Mt. Whitney (14,501 ft.), the highest mountain in the United States outside Alaska. A marvelous high-mountain trail, named



Courtesy of National Park Service

THE HIGHEST PEAK IN THE UNITED STATES

Mount Whitney, which raises its head above every other peak in the country, has an elevation of 14,501 feet above sea level. It is included in the limits of the proposed Roosevelt National Park.



Courtesy of National Park Service

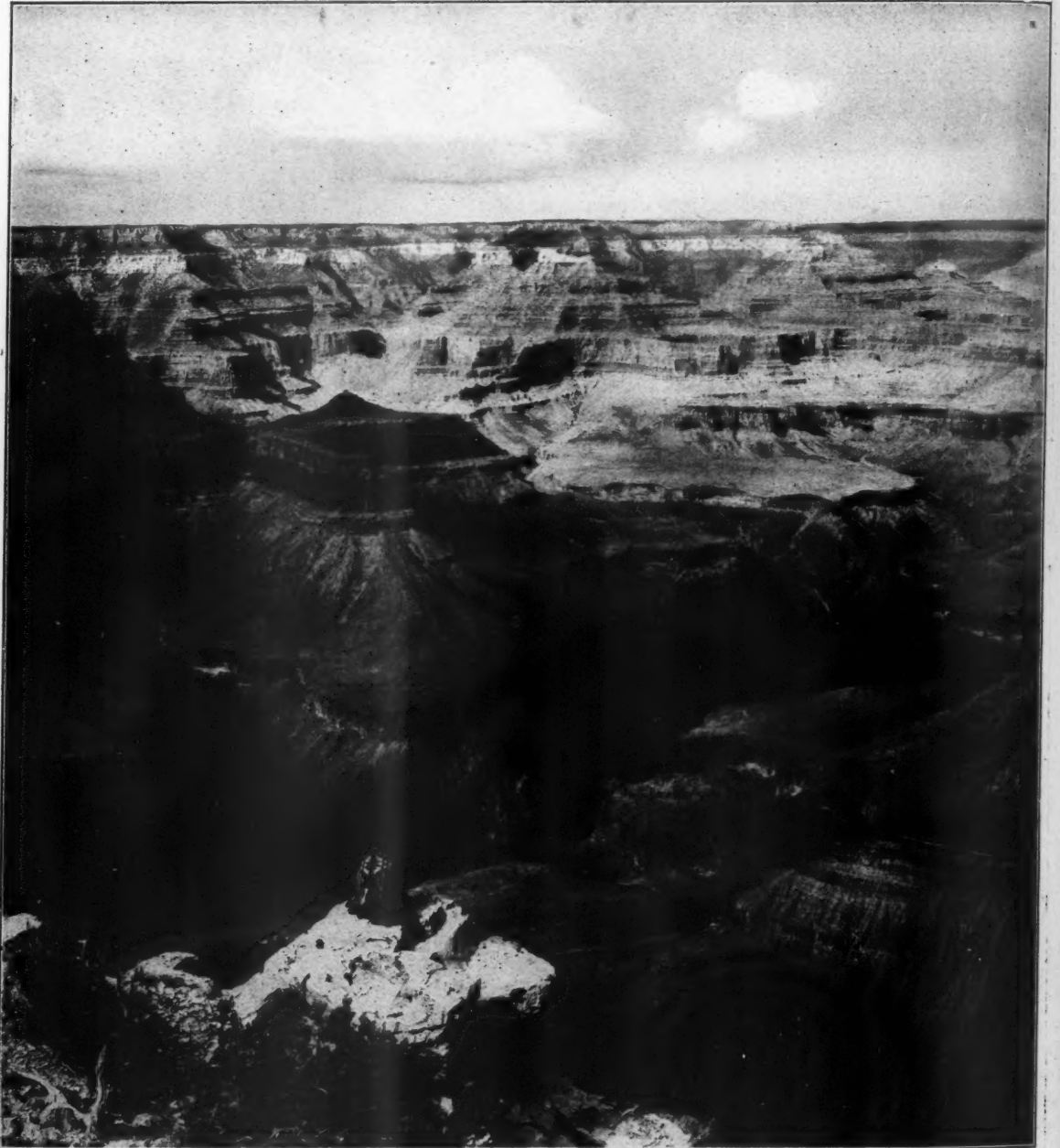
ENTRANCE TO ZION NATIONAL PARK

This enormous canyon is the opening to Zion National Park, in Utah, one visited by many automobile tourists and well worth seeing. The routes for tourists to the Park are almost as attractive as the Park itself.

in honor of the late John Muir (who did much to remove the "unfamiliarity" of our national parks), is in process of completion and will connect the Roosevelt Park with Yosemite. It is urgently hope that both these projects for national parks will receive favorable Congressional action at an early date.

The most important piece of park legislation recently enacted by Congress was the creation, on February 26, 1919, of the Grand Canyon National Park in Arizona. For many years the Grand Canyon has been acknowledged

the acme of canyon scenery the world over. It has been deservedly styled "not the eighth wonder of the world but the *first* wonder of the world." Artists, poets, literary men, and even confirmed globe-trotters have been baffled in their attempt to adequately depict or describe it. Yet with all that has been said and written about it, and notwithstanding that hundreds of thousands of people have visited it, the Grand Canyon still remains the most "unfamiliar" of all our national parks. Its mighty extent, its vast depths, its countless ramifications, its un-



Photograph by H. T. Cowling

LOOKING INTO THE DEPTHS OF THE LORDLY GRAND CANYON

The Indian on the rock in the foreground well represents the spirit of the Canyon, which, in a vast measure, typifies the restraint, the aloofness, the poetry, the dignity, the force and the power which are the highest characteristics of the Indian. The view is from Mojave Point.



Photograph by George L. Beam

THE SILENT CITY

Like a deserted city of great buildings falling in decay is this view of Bryce Canyon, in Utah. The remarkable groupings look like the shattered remains of a city which has undergone a terrific bombardment.

scaled pinnacles and temples, its pervading atmosphere of mystery, combine to make it the most difficult to grasp and comprehend of all our scenic wonders. It will take years of "development" before Grand Canyon becomes, even to a slight degree, "familiar."

In order to gain a partial appreciation of the grandeur of this grandest of grand canyons, it is not enough to arrive at the railway terminus early in the morning, glance over the rim here and there, and then depart on the evening train. That is the program which many visitors adopt, and then they go away and say they have "seen the Grand Canyon." As well might one say that he had "seen New York," having caught a glimpse of its sky-scrapers from the steamer's deck while coming up the Narrows and then immediately taken another steamer going in the opposite direction. A much better program is the following: Spend several days on the rim—just as long as you can possibly afford,—drinking in the vastness and wonder of the scene beneath you, and then, having secured a suitable outfit, descend into the Canyon by the Bright Angel Trail, continue on to the river by the Corkscrew Trail, return to Indian

Springs Garden and camp there over night. The next day be sure and get up early enough to see the sunrise,—a sight you will never forget. After breakfast start out on the Tonto Trail and follow this along the Plateau to the westward, crossing and re-crossing numerous tributary canyons, with occasional close-up views on the right of the Granite Gorge and the mighty river roaring in its dark abyss, while on the left tower the majestic battlements and pinnacles and massive escarpments of the main canyon wall. At nightfall you reach Hermit Camp, tired out but tremendously elated over your trip. The next day you ascend the Hermit Trail back to the rim. Don't hurry—needless advice! you will find abundant reason for *not* hurrying,—but stop now and then and enjoy the glorious scene spread out before you and ever-changing as you ascend, far-reaching in its extent, marvelous in its coloring, overwhelming in its immensity. When you get back to the hotel, after this experience, you will be less inclined than ever to say that you have "seen the Grand Canyon."

(Continued on Page 375)

STEPHEN T. MATHER, THE MAN WHO DID IT

ANY general review of the National Parks is incomplete without mention of the man who rescued them from chaos, made them known to the public, organized them, moulded them into an efficient system, developed their road, trail, hotel and transportation systems to the needs of their swift growth, released them from the bondage of politics and placed them under a body of able superintendents especially trained to the complicated requirements of the service.

Stephen T. Mather did this as his contribution to the nation. But not all of his contribution. When appropriations lagged he drew heavily on his private means. To a protesting friend he once said: "I got my money from the American soil. Let some of it go back as a thanks offering." His business is the mining of borax from the Californian desert.

Franklin K. Lane, because he knew his personal and business quality, invited Mr. Mather to come into the Interior Department as Assistant to the Secretary and prepare the western National Parks for the crowds which the approaching Pacific expositions might be expected to bring them. Mr. Mather spent a month in Washington looking over the situation. It was then he dreamed his great dream of the magnificent system which is now growing under his hands. He accepted the office with the understanding that he should have the chance to make this dream come true.

An incident of his installation is worth telling. Secretary Lane led him into his new office, seated him, bowed grandiloquently and said: "Mr. Secretary, I salute you." Then he left the room, but a moment afterwards thrust his head through the door and said:

"By the way, Steve, I forgot to ask you, what are your politics?"

The situation which faced the new executive was appalling. National Parks were grouped with the odds and ends, the misfits, which Congress from time to time had dropped in to the Interior Department because there was no fitting administrative place for them. There were no appropriations for administration. There was not even one clerk who did nothing else. There was no co-ordination; every National Park was an individual administrative unit. If one, for instance, needed the temporary service of an engineer, it was not lawful to send there the engineer of another park who had nothing to do at the time. An over supply of material purchased for Glacier National Park could not be used in Yellowstone. The task was Herculean.

Mr. Mather surrounded himself with experts and went manfully to it. The first thing was to get the people behind him. Few people could name more than two of the sixteen National Parks then constituting the system. Thousands thought Yellowstone the only National Park. School books contained no mention of National Parks. Only the greater atlases identified them. Their fundamental principle of complete conservation

was understood by very few. Only a handful of men in Congress knew or cared anything about them. To most, they were merely a group of playgrounds which happened to be owned by the nation and therefore must be cared for.

After a year's study Mr. Mather determined that a bureau of administration at Washington was the necessary first step toward development and systematization. An idealistic bill to create a bureau had already been introduced into Congress, which he remodeled to the practical needs of the situation. In 1916 Congress, passing this bill, created the National Park Service, but appropriated no money; so it did not become effective till the following year. Resigning his Assistant Secretaryship, Mr. Mather then became Director of this Service. The magnificent national parks system we now possess has been his accomplishment of the several years since. May he live the years necessary to carry his splendid dreaming into full realization!

From the beginning Mr. Mather realized that success depended upon the complete elimination of politics from the administration of the Parks. This was easy to accomplish in the new administrative office in Washington, but it was a matter of difficulty in the field, where the superintendencies had been regarded as legitimate political plums.

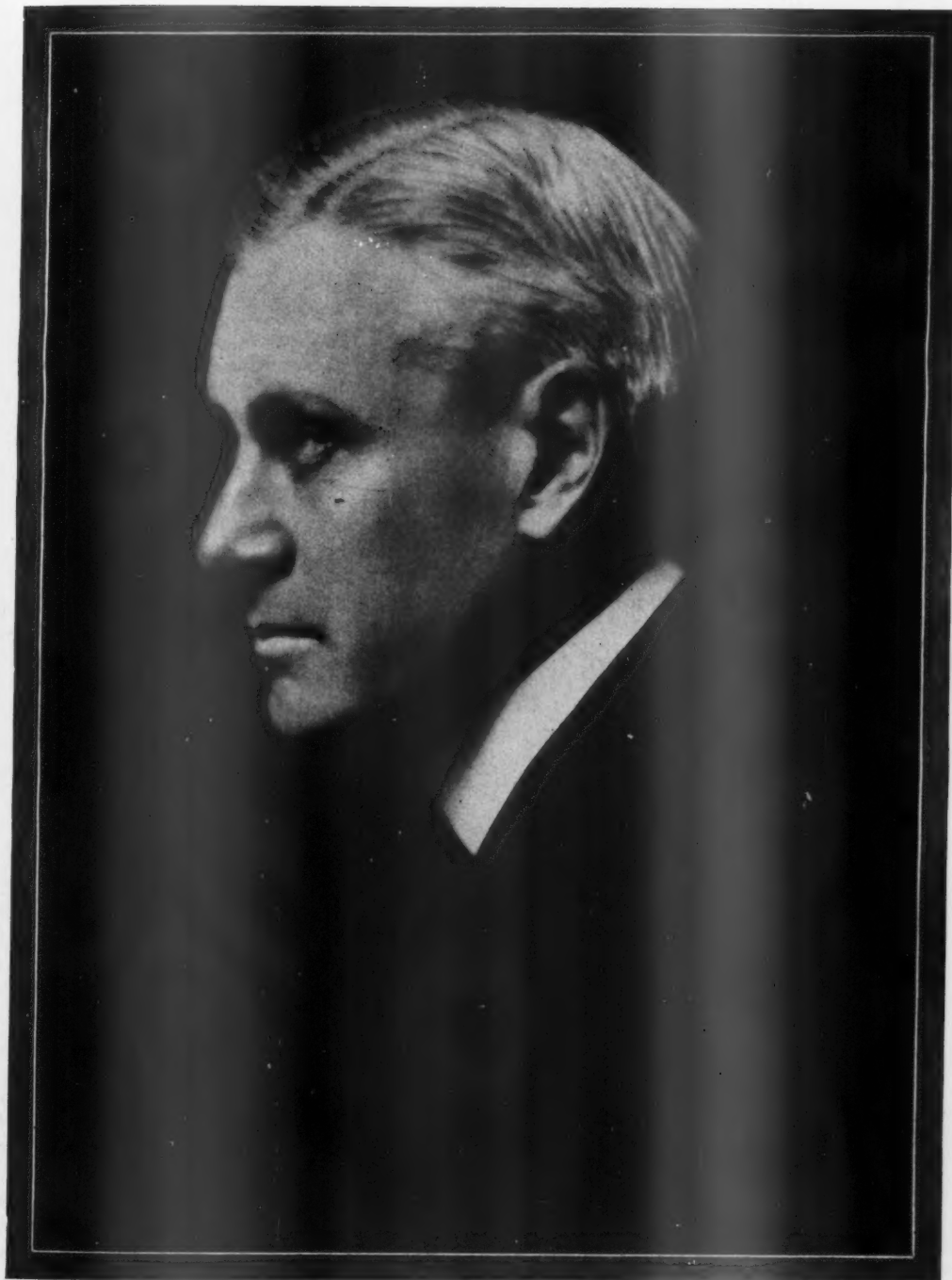
But these were the points of most importance. Upon the personal quality, fitness and training of the superintendents depended absolutely the success or failure of the whole.

The superintendent must not only be a man of administrative ability and trained to the life and hard conditions of the wilderness. He must be a natural leader and handler of rough men, a strict and just disciplinarian. He must be an indefatigable worker, a resourceful commander in the emergencies of the wilderness. He must make a dollar do the work of two. He must know how to fight fires, protect forests and wild animals. If not an engineer, he must be familiar with road building and construction work of all kinds under wilderness conditions, prepared to take personal charge and make difficult decisions in emergency. He must do his work with a minimum of assistance, for appropriations were altogether insufficient.

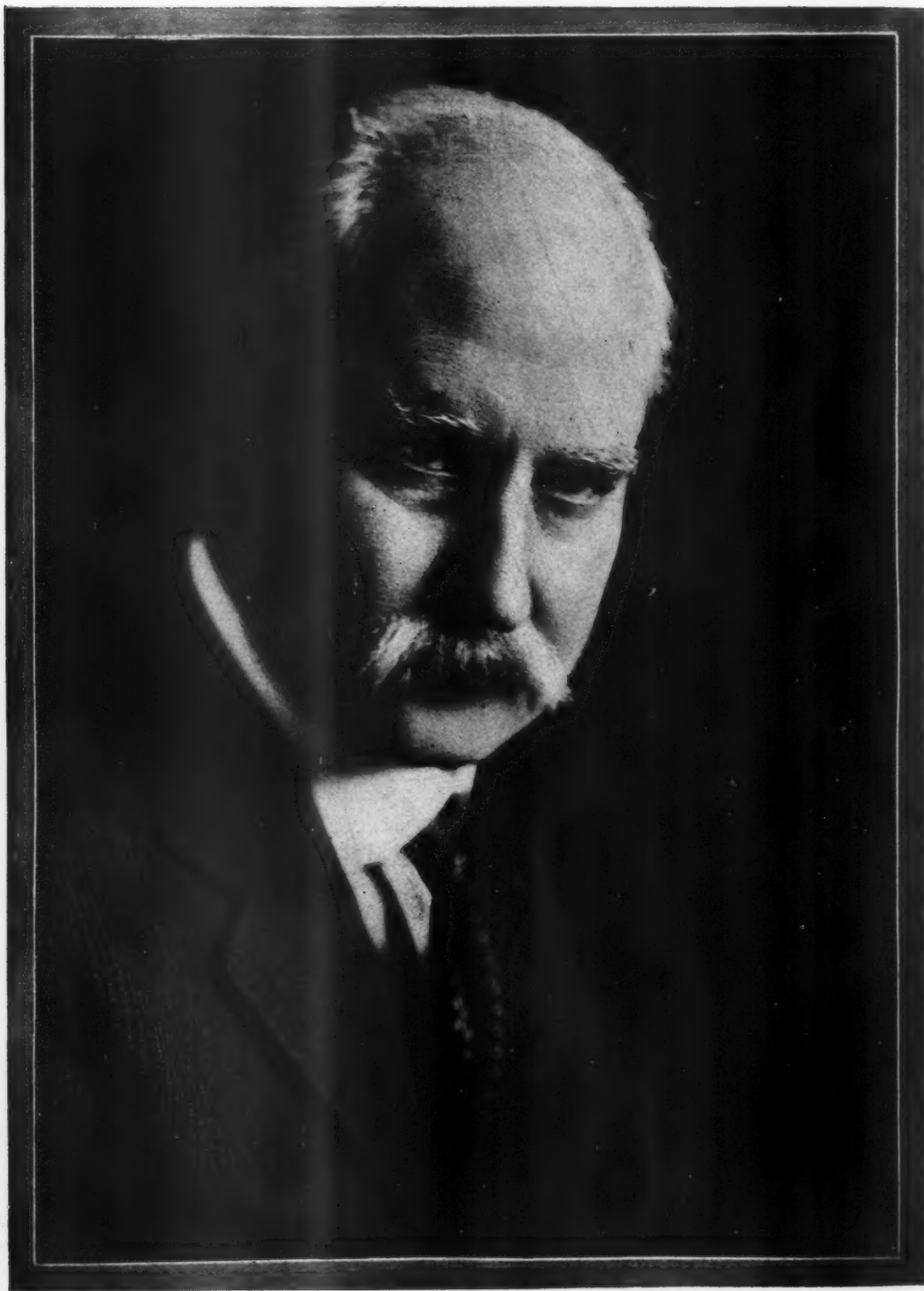
And besides these qualifications, difficult enough to find combined in any one executive, the superintendent must also be the wise, forceful, energetic, diplomatic and accomplished guardian of the many thousands who every year visit his wilderness from homes in cities and towns!

To find these men, to persuade them to accept government salaries, to train them, watch their work and back them up was a feat of the utmost difficulty. His success has been remarkable so far as it has gone. It is a work of years.

National Park superintendents are on the "unclassified list," that is, they are not protected in their positions by



STEPHEN T. MATHER
Director of the National Park Service



ALBERT BACON FALL
Secretary of the Interior

the civil service. It would have been easy to have them classified, but that would have kept in office many wholly unfitted for their places. Mr. Mather's policy, then, was to withhold classification until he could reasonably perfect the force. This force then, remains today open to political enterprise. It is the one necessarily weak place in the organization of the National Park Service.

Under Mr. Mather's leadership, the National Parks have not only become a great system astonishingly efficient when you consider the brief period of their development, but they have become the idol of the people. The system is the most popular work under government control today. Visitors have increased manyfold. They more than doubled even during the war. And Mr. Mather has nearly quadrupled Congressional appropriations. He has added new and splendid parks—

Grand Canyon, Mount McKinley, Hawaii, Lassen Volcanic, and the first national park in the east, Lafayette.

But Mr. Mather's ideas are by no means confined to the upbuilding of a well organized and well administered system. His dream sees them a system of international fame, drawing many thousands of foreign visitors yearly to America. He sees these Parks the objective points of great systems of automobile highways, county, state and national, drawing a million motorists from all the states to common meeting grounds. He sees them the lure to great increases of railroad travel. He sees them important prosperity-makers for the states which border them. To all these ends he is indefatigably shaping his building.

It is a great dream which he no longer possesses alone. America shares it with him.

THE VALUE OF OUR NATIONAL PARKS

BY HON. ALBERT B. FALL, SECRETARY OF THE INTERIOR

SCENERY is one of the most valuable resources of any country. This was evidenced before the war by the great part tourist travel played in the income of France, Switzerland, Italy, and other countries, and the effort now being made by foreign countries to re-establish the tourist industry on a larger plane. For touring is based on the enjoyment of scenery, and the country that has the best to show will enjoy the largest influx of visitors. As a Nation we are richly endowed with scenery, but pre-eminent stand the National Parks. Briefly stated, these now number nineteen, and, including the tremendous volcanic exhibits of the Hawaiian Islands and the Mount McKinley game section of Alaska, are areas of supreme scenic splendor or possessing other unique quality, which Congress has set apart for all time for the use, health, recreation and enjoyment of the people.

In the creation of National Parks the element of size is of no importance. The scenery must be of such supreme and distinctive quality or there must be natural features so extraordinary or unique as to be of national interest and importance. Areas which express in less than the highest terms the particular class or kind of exhibit which they represent are not included, for to do so lowers the standard, and impairs the dignity and prestige of the existing National Park system. This principle is readily understood after a study of the individual characteristics of the existing National Parks.

The appeal these nationally preserved wonderlands have made is fully proven by the phenomenal increase of travel to the Parks during the last three years. Including travel to a few of the 24 National Monuments, travel to the Parks in 1918 amounted to 451,661 people; in 1919 to 811,516; and during the last season, 1920, to 1,058,455. The majority come in their own motor cars. Every opportunity is afforded the public to enjoy their visits in the manner that best satisfies the individual taste, and to enable this, the fullest possible freedom of action is

granted and the varied forms of outdoor entertainment are provided. Hotels and camps are established providing a variety of accommodations. Mountain climbing, horseback riding, hiking, motoring, swimming, boating, and fishing, and above all camping, are the favorite sports during the height of the summer season. In winter the development of winter sports in such parks as the Yosemite, Rocky Mountain, and Mount Rainier already offers opportunities for skiing, sleighing, snowshoeing, tobogganing, skating and the like amidst ideal surroundings; indeed, most significant is the fact that during the last winter the Yosemite Valley entertained visitors from 37 States of the Union, and from 23 foreign countries.

The educational values of the National Parks are also becoming more and more recognized. They offer opportunities to universities and schools for the conduct of vacation period studies. The nature guide courses that have been instituted have proven exceedingly popular, and will gradually be extended to other Parks. In time, adequately equipped museums containing specimens of wild flowers, shrubs, and trees, and mounted animals, birds, and fish native to the individual Parks, may be provided. Already the Parks are developed with roads and trails which are being expanded as appropriations are made available by Congress, and yet are established with such care that any over-development to disturb the quiet enjoyment of the wild places is guarded against. Hunting, of course, is not permitted, except in the Mount McKinley Park, in Alaska, under exceptional circumstances, because one of the prime purposes in the establishment of the Parks is that they are to constitute game sanctuary, where wild life may be observed and developed in its natural habitat.

The term "National Parks," therefore, has a definite meaning. It means that as long as this policy of National Park maintenance endures, there will always be an untouched bit of native wilderness preserved from the leveling forces of economic development. And yet they play a most important part in the development of the part of

(Continued on Page 406)

OUR NATIONAL PARKS AND HOW TO REACH THEM

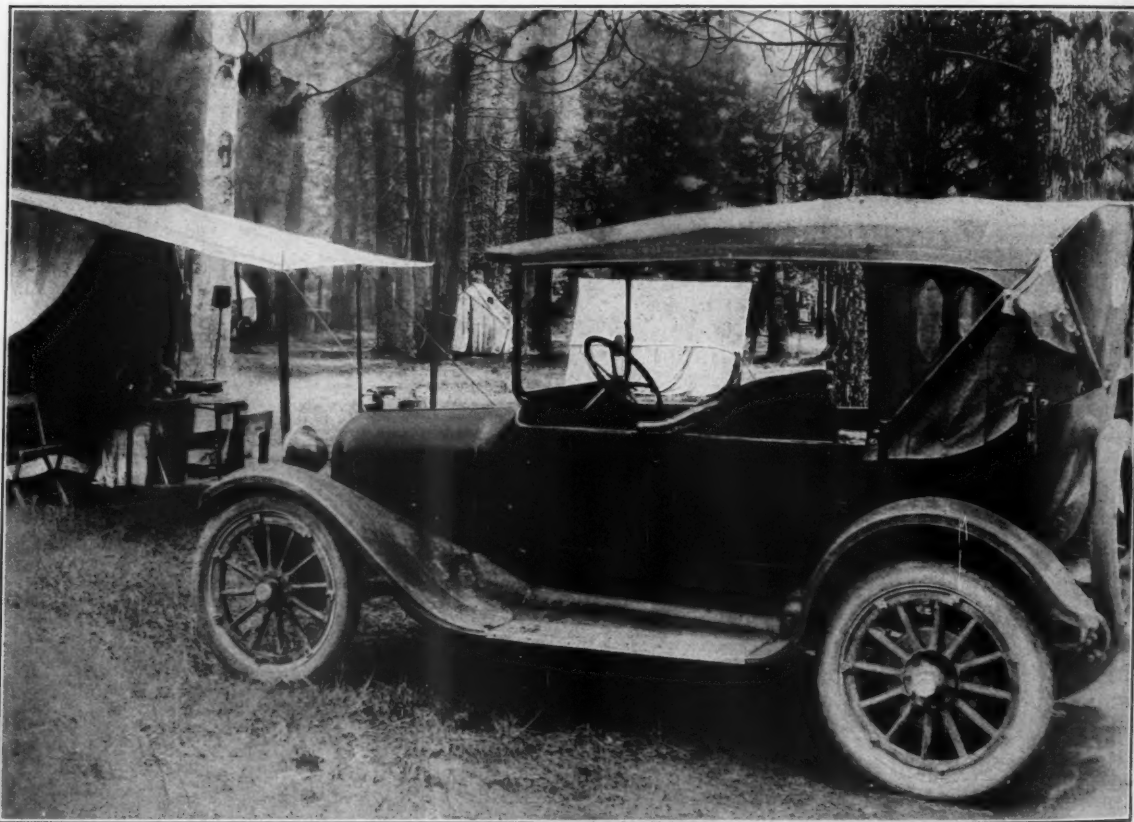
BY ARTHUR E. DEMARAY, EDITOR, NATIONAL PARK SERVICE

IN 1920 over a million persons visited the 19 National Parks and 24 National Monuments. It would seem that, with such a volume of travel to the Parks, prospective tourists would have a general idea where the Parks are located and how to reach them, but such is not the case. Sixteen of the National Parks lie west of the Mississippi River; thirteen of these dot the Rocky Mountains and the Pacific Coast ranges; one National Park is on the Hawaiian Islands; the Mount McKinley National Park is in Alaska; and the only National Park east of the Mississippi is on Mount Desert Island off the Coast of Maine. Naturally, the great bulk of travel to the National Parks has so far been from the Middle West and from the States in which the Parks are situated, although, more and more persons living in the East are planning western trips, either by railroad or by motor, to include one or more of the National Parks. It is to these prospective Park tourists that this message is addressed.

The railroads have announced summer excursion fares to the National Parks at much reduced rates, effective June 1; return tickets may be used until Octo-

ber 31, allowing for liberal stopovers enroute. These tickets may be purchased to include one National Park or to include several, and it is possible to combine the major parks in a grand circle tour of the West. In fact, these grand circle tours are becoming increasingly popular. Among the large tourist agencies offering escorted tours are the American Express Company, Frank and Company, Thos. Cook & Sons, and Raymond and Whitcomb, while the Travel Club of America and the Massachusetts Forestry Association conduct such trips each year. The Chicago and Northwestern Railway and the Union Pacific System have established a Bureau of Service of National Parks and Resorts in Chicago, Illinois, which not only furnishes complete information regarding accommodations, costs, and how to reach the National Parks to all applicants without charge, but also conducts escorted National Park tours to the Yellowstone and Rocky Mountain National Parks.

Let us follow a typical itinerary and make one of these grand circle tours. Leaving Chicago, our first objective is Denver, Colorado, which is oftentimes called the "Gateway to the National Parks." The first Park



Courtesy of National Park Service

ONE OF TWENTY-FIVE THOUSAND CAMPERS IN 1920

Only a few years ago less than 25,000 tourists went to all the National Parks every year; but in 1920 that number alone camped in Yosemite National Park. The photograph shows one outfit comfortably located on the free public camp grounds there.

to be visited is the Mesa Verde National Park in southwestern Colorado, the home of the cliff dwellers whose prehistoric structures nestle in the sides of the canyons which seam the pinyon-covered mesa which gives the Park its name. The trip is made over the Denver and Rio Grande Railroad by way of Colorado Springs, Pueblo, and Alamosa to Mancos, Colorado, which is the point of departure for the Park. From Mancos automobile stages operate daily into the Park during the season from May 1 to November 1. A public camp is available and comfortable lodgings and good meals are furnished. The return to Denver is via Montrose,

ing feature of the Park. Here also are remarkable records of the glacial period which may be discerned by the untrained eye. We may go to the Park all the way from Denver by motor or we may go to one of the principal railroad entrances from which daily motor stage service is available the year around. Let us take the trip from Denver by motor, passing Longs Peak enroute and crossing over the Continental Divide by the new Fall River Road, which reaches an elevation of 11,767 feet, to Grand Lake, the western entrance to the Park where we will rest comfortably overnight in an excellent lodge. Denver is made the next day, cross-



Photograph by George L. Beam

HOMES OF THE ANCIENTS

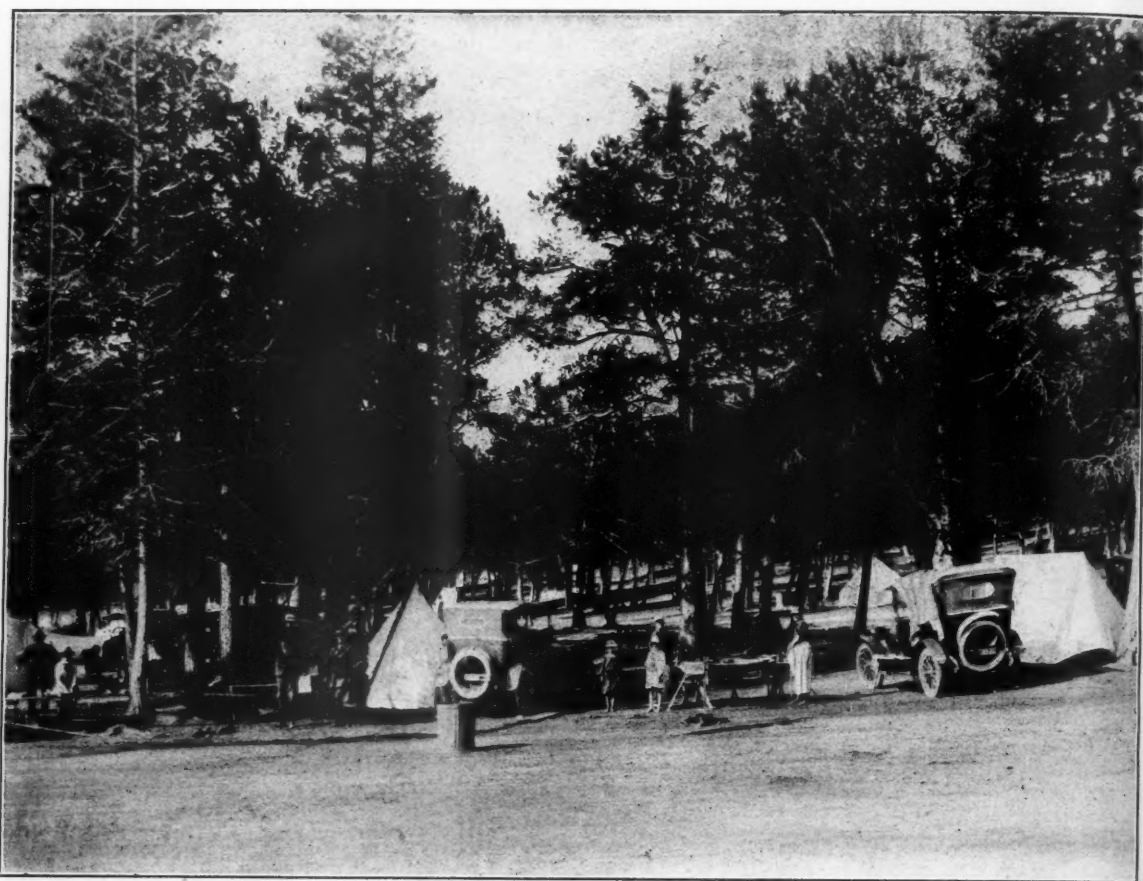
The Fire Temple Group as seen from across Fewkes Canyon in the Mesa Verde National Park. This group was excavated and restored by Dr. Fewkes in 1920. It is an unusually fine example of the cliff dwellers' homes.

Salida, the Royal Gorge of the Arkansas and Colorado Springs. This is the "Around the Circle" trip and some of the finest scenery in the Rocky Mountain region is traversed. Seven days are required to make the trip.

The next Park to be visited is the Rocky Mountain National Park in northwestern Colorado. Here three hundred and ninety-seven square miles of the Rocky Mountains have been reserved as a great National playground. The "Snowy Range," as this section is sometimes called, has peaks which average from 11,000 feet to the 14, 250 feet altitude of Longs Peak, the culminat-

ing the Divide a second time through Berthoud Pass, altitude 11,000 feet, and including a section of Denver's Mountain Park System. The charge of \$25.74 for this more than 230 miles motoring is very reasonable.

The next National Park to be visited on our itinerary is the Yellowstone, the land of geysers—the land containing the cameo of canyons, the Grand Canyon of the Yellowstone—the land of the bear, the elk, the buffalo and other exhibits of the native wild life of America. The rail journey is made north from Denver through Cheyenne to Cody, Wyoming, a town established by the late



Photograph by J. E. Haynes

ACCOMMODATING CAMPERS IN THE PARKS

Camping grounds are provided for automobile tourists in the Parks and they are properly policed and kept clean. This camp is at Mammoth Hot Springs, in Yellowstone National Park. As many as 300 cars were parked in this camp on a single night during the tourist season of 1920.

Wm. F. Cody, better known as "Buffalo Bill." Here the auto stages await us for our trip through the Park. The regular four and one-half day tour costs \$54 if we stop at the hotels and only \$45 if we stop at the big permanent camps. This charge, of course, includes the motor transportation. We have the privilege of coming in by one entrance and leaving by the same entrance or leaving by either of the other entrances. The Park season is from June 20 to September 15. On our particular journey we will leave by the northern, or Gardiner, entrance.

From Cody the road follows through the Canyon of the Shoshone River, where we view the great reclamation dam and reservoir; thence through Sylvan Pass, skirting Yellowstone Lake, and on to the Grand Canyon of the Yellowstone for our first night in the Park. Next day our stage will carry us across to the Norris Geyser Basin, through the Lower and Upper Geyser Basins to Old Faithful. The third day the Continental Divide is crossed and the day's journey ends at Yellowstone Lake, where we may fish if we desire. The fourth day the Grand Canyon is again visited and the journey to Mammoth Hot Springs is made via the Dunraven Pass, or, if we desire, we may cross the summit of Mount Washburn upon the payment of \$2 extra fare. Our last night in the Park is

spent at Mammoth Hot Springs, where great terraces have been built up by the deposition of the mineral from the waters of the hot springs. The fifth day we leave through the Gardiner Canyon and resume our trip by rail to Glacier National Park in northwestern Montana. We have the choice of going via Billings or by Helena, the State capital.

Glacier Park Station is the eastern entrance and the beginning of the road to the Many Glacier Hotel on Lake McDermott, 58 miles distant. One of the largest and finest log hotels ever constructed cares for the Park tourists at Glacier Park Station. The Park season is from June 15 to September 15. There are many wonderful trail trips to be made in Glacier Park, for Glacier, more than any other Park, is one in which the tourist, who desires to really see it, must ride or hike the trails. It is a rugged mountain region of unsurpassed alpine character, with over 250 glacier-fed lakes of romantic beauty and more than 60 small glaciers. It is, however, the superb massing of its mountain peaks and its beautiful lakes that mark its individuality. There are three principal passes from the east to the west side—the Gunsight Pass, Logan Pass and Swift Current Pass. At present there is no road crossing through the Park, but Congress

has approved a transmountain road project and has appropriated \$100,000 to commence its construction. This road will skirt the north shore of St. Mary Lake, crossing the Divide through Logan Pass, descending the valley of McDonald Creek to Lake McDonald and skirting the east side of this, the largest of Glacier's lakes, joins the present road at its lower end. Construction this year will be centered on the Lake McDonald section. It will require about five years to complete the highway.

We will assume that we have crossed through Glacier by horseback and have arrived at Belton, the west entrance. Here at 10 o'clock at night we may take a sleeper on the Great Northern's Oriental Limited, and the following evening at 8 o'clock we will arrive at Seattle, Washington. Of course, we must spend some time sight-seeing in Seattle, but our next Park objective is the Mount Rainier National Park, which we may reach by motor from Seattle or Tacoma during the season from June 15 to September 15.

"Easily King of all is Mount Rainier," wrote F. E. Matthes, of the United States Geological Survey, reviewing that series of huge extinct volcanoes towering high above the sky line of the Cascade Range. "Almost 250 feet higher than Mount Shasta, its nearest rival in gran-

deur and in mass, it is overwhelmingly impressive both by the vastness of its glacial mantle and by the striking sculpture of its cliffs. The total area of its glaciers amounts to no less than 48 square miles, an expanse of ice far exceeding that of any other single peak in the United States. Many of its individual ice streams are between four and six miles long, and vie in magnitude and in splendor with the most boasted glaciers of the Alps. Cascading from the summit in all directions, they radiate like the arms of a great starfish."

The southwest corner of the Park, at which is the main entrance, is distant by automobile road 56 miles from Tacoma and 90 miles from Seattle. The Park road is 20 miles in length and ends in Paradise Valley, where the Paradise Inn is located. From Paradise Inn, or Camp, for there is a very comfortable tent camp located here, the principal trail trips and climbs are available. Of course, the summit climb is the "big stunt" of the Park. Mount Rainier has an altitude of 14,408 feet, and is the third highest peak in the United States. Experienced Swiss guides are employed to take the climbing parties over the glaciers, and while the summit climb is strenuous, both men and women make the trip. One of the most enjoyable sports in Rainier is snow sliding. Guides will



Photograph by R. E. Marble

MANY GLACIER HOTEL, GLACIER NATIONAL PARK

The tourist need have no fear that his comfort will not be properly provided for when he has such hotels as this to lodge and feed him as he travels through the Parks.

equip us with "tin pants," which are merely khaki riding trousers with reinforced seat heavily paraffined. After several hours climbing up steep snow drifts we are told to simply sit down and lift up our feet, and, if we are lucky, we may accomplish a graceful slide.

From Seattle our rail journey is continued south to Portland, Oregon, where we should stop at least for a day in order to enjoy the scenic motor drive over the Columbia River Highway. The next Park to be visited is the Crater Lake Park, in southern Oregon. The train is left at Medford, Oregon, where automobile stages will carry us to the Park some 84 miles distant. Stages operate daily to Crater Lake during the Park season, July 1 to September 30. The National Park takes its name from the lake of extraordinary blue in the crater of an extinct volcano whose sides average from 800 to 1,000 feet high. An excellent lodge stands on the rim of the crater. An easy trail runs down to the water's

edge and motor-boat trips may be made around the lake. Here also some of the finest trout fishing may be had. A road has been built entirely around the rim of the lake, giving fascinating views of the lake lying below at nearly every turn. We must continue our journey and we motor to Klamath Falls, Oregon, which is at the end of a branch line of the Southern Pacific. However, a through sleeper is waiting to take us to San Francisco. This special sleeper is picked up on the main line at Weed, California, where a splendid opportunity is had to view snow-crowned Mount Shasta.

If we had time we might stop at Red Bluff California, and engage an automobile for a trip to the Lassen Volcanic National Park. Lassen Peak, the only active volcano in the United States, is the chief scenic feature of the Park. We journey on, however, to San Francisco.

Across the Bay from San Francisco on the slopes of Mount



NELLY NO-CHIEF

A Blackfeet Indian maiden of Glacier Park who has no fear of the camera and does not believe in the short skirt fashion.



Photograph by R. E. Marble

BLACKFEET INDIAN LODGE, GLACIER NATIONAL PARK

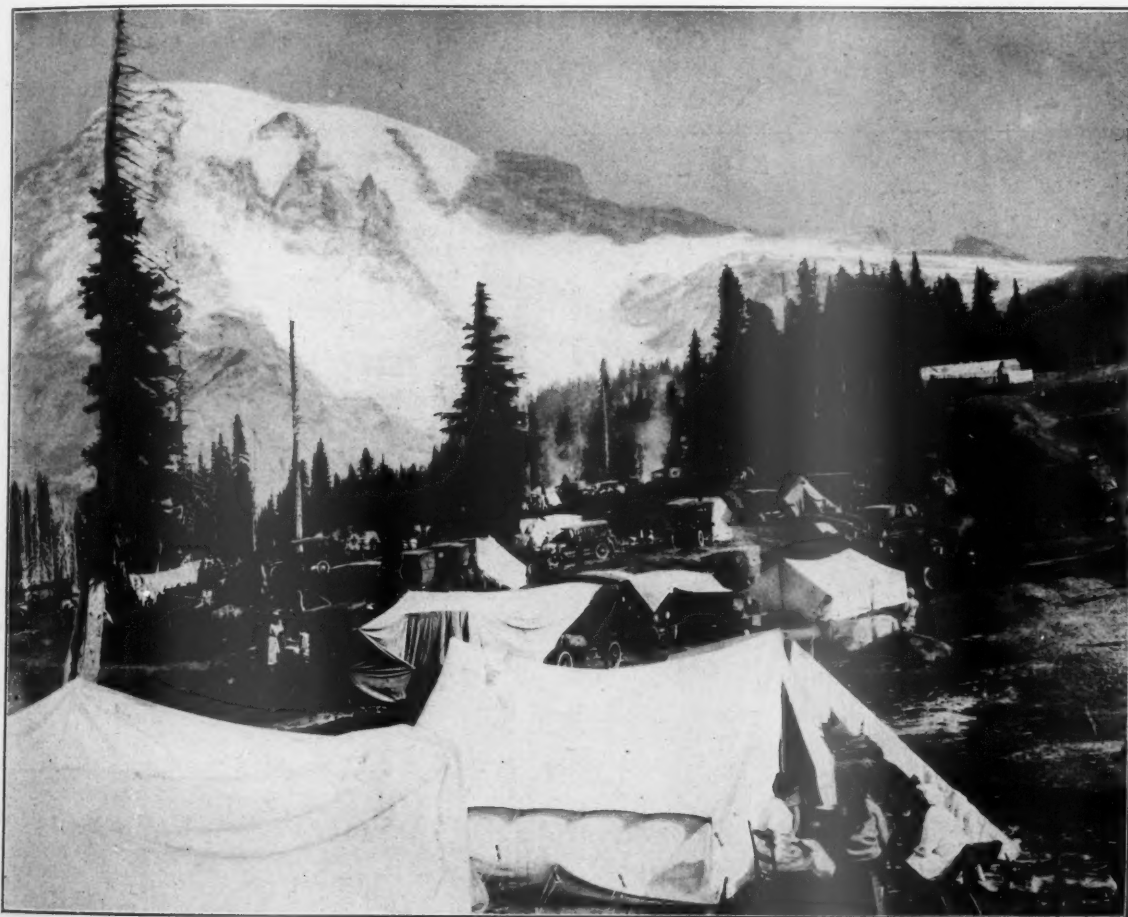
One of the ever interesting attractions at Glacier National Park are the Blackfeet Indians, of whom hundreds may be seen. The photograph shows Mrs. Louis Hill and a party of friends visiting a Blackfeet Indian Lodge.

Tamalpais lies the Muir Woods National Monument, a magnificent stand of *sequoia sempervirens*, the gift to the United States of William Kent, former Congressman from California. This is one of the most noted redwood groves in California.

But the wonderful Yosemite is calling.

We board the train in San Francisco at 8 o'clock in the morning and that evening we are dining in either the hotel or one of the camps on the floor of the Yosemite Valley. No matter what our expectation, we are delightfully astonished upon entering the Yosemite Valley. The sheer immensity of the precipices on either side of the Valley's peaceful floor; the loftiness and the romantic

Park from east to west and, penetrating the High Sierra through Tioga Pass, drops to the desert-like region of Mono Lake on the east side; thence through historic towns of pioneer days in Nevada finally reaches Lake Tahoe. Daily stage service is available between Yosemite Valley and Tahoe Tavern on Lake Tahoe between July 15 and September 15. The trip requires two days and the cost of transportation is \$35. Meals and lodgings enroute will average from \$10 to \$12 per passenger. Tahoe Tavern is reached by rail from Truckee, California, on the main line of the Southern Pacific Railroad. Transcontinental tourists may leave the main line at Truckee, go by train to Lake Tahoe, thence by motor stage over



Photograph by Frank A. Jacobs

CAMPING NEAR THE SNOW LINE

Beautiful Rainier Park attracts thousands of automobile tourists and the photograph shows how they make themselves at home in the free public camp ground in Paradise Valley, with the magnificent mountain facing them.

suggestion of the numerous waterfalls; the majesty of the granite walls; and the unreal, almost fairy quality of the ever-varying whole, can not be successfully foretold. But the Valley is only a small part of the Yosemite Park. It occupies eight square miles out of a total of more than one thousand one hundred. The Park above the rim is less celebrated, principally because it is less known. One of the finest trips in the Yosemite, if not in America, is over the Tioga Road, which crosses the

the Tioga Road to Yosemite Valley, thence by train to Lathrop, California, and resume their trip to San Francisco, or may reverse this route, paying for detour transportation between Truckee and Lathrop via the Yosemite Park and Lake Tahoe.

Of course, we must visit the Mariposa Grove of Big Trees in Yosemite and we will motor there from the Valley, remaining over night in the delightful hotel at Wawona, and continue the following day to Merced,

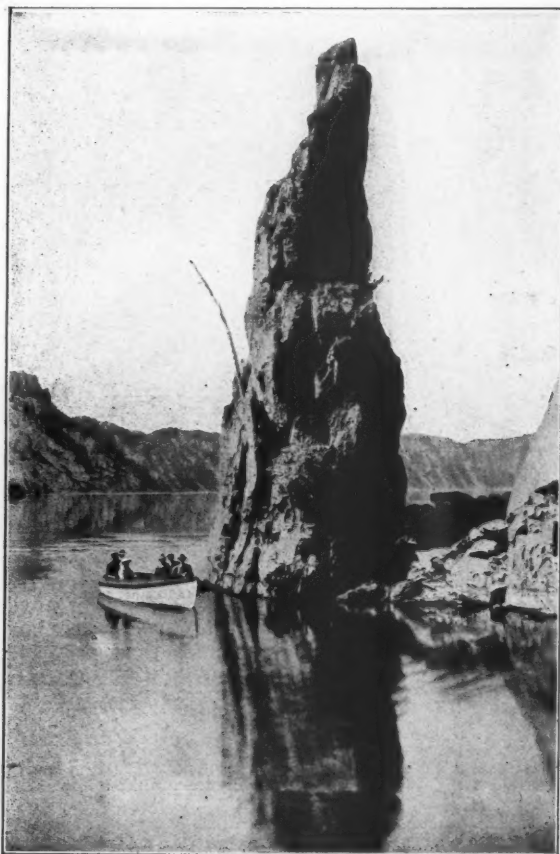
where our rail journey is resumed to Fresno, if we are to visit the General Grant National Park, or to Visalia, if we are to visit the Sequoia National Park.

The General Grant National Park, which has an area of but four square miles, was created to preserve the celebrated General Grant tree, which is the second largest living thing in the world. The Sequoia National Park is the big tree Park. There are 12,000 trees over 10 feet in diameter, some are 25 feet to 36 feet in diameter. The General Sherman, the largest and oldest living thing in the world, is 36.5 feet in diameter, 102.8 feet in circumference, and 279.9 feet in height. Stages operate between Fresno and the General Grant Park and from Visalia to the Giant Forest in the Sequoia National Park during the Park seasons, which are from May 24 to October 10.

North and east of these Parks lies the wonderful area which it is proposed to reserve as the Roosevelt-Sequoia

is the highest elevation in the United States proper. Access to this region is now available by saddle and pack horse from either the General Grant or Sequoia National Parks.

Los Angeles and southern California are the natural



THE SENTINEL IN CRATER LAKE

The bottom of the lake in most places pitches off at such a steep angle that it is quite possible for the motor-boat to hug in close to the surrounding rocks and cliffs. This remaining sentinel of a by-gone period is invariably visited by the motor-boat.

National Park. This is destined to be one of the world's greatest playgrounds. Its three tremendous canyons, the Kings, the Kern, and the Tehipite, are already famous. The eastern boundary will be the crest of the High Sierra, of which Mount Whitney, 14,501 feet in altitude,



VERNAL FALLS, YOSEMITE PARK

This is one of the big scenic features of the famous Park and has been described by many artists and poets with brush and pen.

habitat of the tourist, and thither we are bound. We may leave Fresno or Visalia in the late evening and the following morning will arrive in Los Angeles. If we desire to visit Zion National Park in southwestern Utah we may do so as a side trip from Los Angeles. Leaving Los Angeles on the Salt Lake Route in the morning, we arrive at Lund, Utah, the following morning. From Lund motor stages operate daily during the season from May 15 to November 1, to Zion Canyon, a distance of 100 miles. Zion Park is also reached from Salt Lake City via the Salt Lake Route. A combination of the beauties of Yosemite Valley and the Grand Canyon might be used to describe Zion Canyon, which is the principal accessible feature. The cost of the side trip from Lund is \$36.50, which includes motor transportation, meals and lodgings, and two nights at the Wylie Camp in the Park. It is possible to include in the side trip the marvelous Bryce Canyon, which lies in a straight line about 50 miles northeast of Zion.

Our grand circle tour is nearly finished, although the greatest spectacle is yet to be presented; this is the Grand Canyon National Park in northwestern Arizona. We make our reservations on the Grand Canyon car of the California Limited, the crack train of the Santa Fe Railroad, and, leaving Los Angeles at 11.30 A. M., we ar-

rive at Grand Canyon the following morning at 8.20 A. M. our sleeper having been detached at Williams, Arizona, in the night and carried through to Grand Canyon early in the morning. Most tourists retain the same space on the Grand Canyon car and leave the Park that night for their return to Chicago; but this is an unfortunate mistake. One can not begin to comprehend in one day the spectacle that is unfolded. Three days at least are needed, a week's time is better, and even longer may be spent profitably. However, as we are following a typical grand circle tour itinerary, we are allowed only one day at Grand Canyon, and then we are enroute to Chicago, our starting point.

It is possible to complete the tour as outlined in from 60 to 70 days, depending upon the time allowed in the various Parks. The cost will average from \$800 to \$1,100, which includes all expenses. Of course, very much cheaper trips can be planned from practically every point in the United States, visiting one or more of the National Parks. On practically all transcontinental trips it is possible to visit at least one National Park.

From Seattle, Washington, one may make the boat trip to Alaska, and in another year tourists will be able to make the trip over the new Government railroad from Anchorage to Fairbanks. This new railroad closely approaches the Mount McKinley National Park. Mount McKinley, altitude 20,300 feet, is the highest mountain in North America. It has the further distinction of rising higher above the surrounding country than any other mountain in the world. The Park area is the fountain head of the big game herds of Alaska.

From most of the Pacific Coast cities steamship service is available to the Hawaiian Islands. The Hawaiian National Park embraces three areas, two of which are on the Island of Hawaii, and the third on the Island of Maui. These areas include the summits of Mauna Loa and Kilauea, and the extinct crater of Haleakala. Kilauea's "Lake of Everlasting Fire" is one of the most spectacular exhibits in the world. It is reached from Hilo, the second largest town on the Islands, and hotels are available within the Park area. The Hawaiian Islands have been brought closer to the East through the establishment by



Photograph by George L. Beam

ON THE BRINK OF BRYCE CANYON

This impressive canyon is in Utah and is reached from Marysvale, on the Denver and Rio Grande Railroad. It is well worth the trip and a long stay after arrival in order to thoroughly appreciate the constantly changing light effects on the formation.

the Matson Company of direct steamship service between Baltimore and Honolulu via the Panama Canal. New large palatial steamships are operated on this route.

Lafayette National Park in Maine, while mentioned last, is one of the important members of the National Park system. The Park area is composed of the group of granite mountains upon Mount Desert Island. The Cadillac Mountain, altitude 1,532 feet, is the highest point of the eastern coast. Hotel accommodations are available at Bar Harbor, which is reached by train and boat service

Yellowstone Trail, National Parks Highway and Theodore Roosevelt International Highway. There are other highways beginning in the Middle West and reaching several of the Parks. The Custer Battlefield Highway extends from Omaha, Nebraska, to the Glacier National Park. The Black and Yellow Trail extends from Chicago to the Yellowstone National Park.

All these highways, with the exception of the Old Spanish Trail and Bankhead Highway, join and give access to the National Park-to-Park Highway, which was estab-



Courtesy of National Park Service

CAMPING UNDER THE GIANT SEQUOIAS

Attractive camps in the shadow of these noble trees are dotted throughout the forest during the season in the Sequoia National Park, California, and every year finds more and more campers taking advantage of the opportunity offered for a delightful trip.

from practically all points in the East; also good motor roads reach the Island.

But one will say that the above information is of no use to the person who is planning a motor trip through the National Parks, and the question arises whether one can go by motor; the answer is yes. In fact, 60 per cent of the Park travel last year was by private automobile. From south to north there are nine main transcontinental highways crossing the United States from east to west. These named in order are: Old Spanish Trail, Bankhead Highway, National Old Trails, Roosevelt National Highway, Pikes Peak Ocean to Ocean Highway, Lincoln Highway,

lished and designated last fall by the National Park-to-Park Highway Association in cooperation with the American Automobile Association, and with the approval of the Department of the Interior. The National Park-to-Park Highway is 4,700 miles long. It passes through nine western States and links in a great circle chain Rocky Mountain, Yellowstone, Glacier, Mount Rainier, Crater Lake, Lassen Volcanic, Yosemite, General Grant, Sequoia, Grand Canyon, and Mesa Verde National Parks—the heart of the Continental Divide; geysers; glaciers; ice-clad mountain peaks piercing the sky; crater of long dead volcano filled with a wonderful lake of deepest blue

water; the only active volcano in the United States; glacier-carved valleys; canyons cut by the action of the elements, thousands of feet deep; mammoth trees; and ruins of cities whose prehistoric inhabitants have left no other record. In extent and grandeur of natural exhibits it surpasses any other scenic drive on earth.

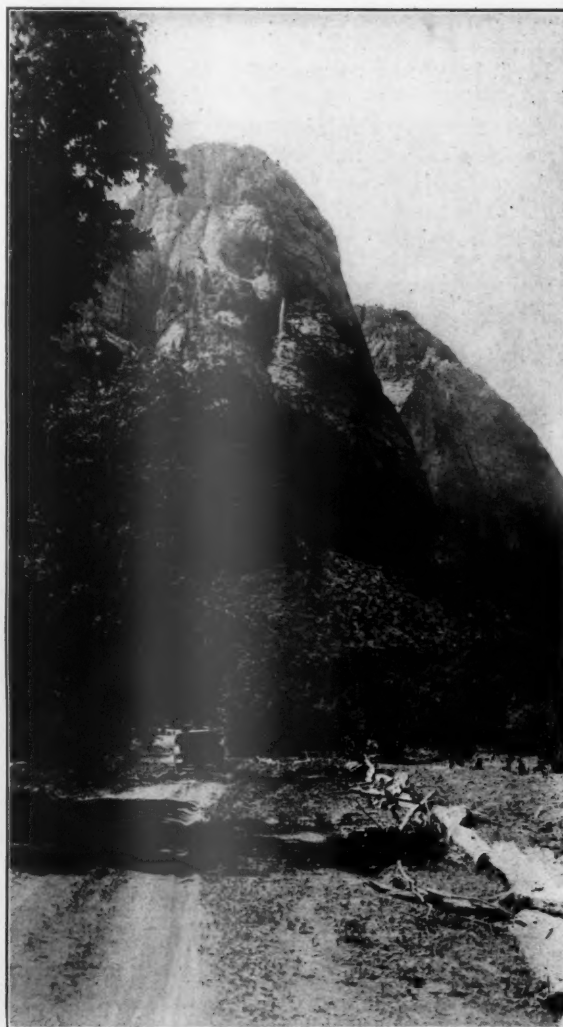
This wonder highway also offers to the tourist the greatest exhibits of wild life in America and variations in climate along its course from the torrid to the frigid, often within the space of a few hours; an excellent example of this is the run from the San Joaquin Valley to the Sequoia National Park, where, by simply going up the mountains, one may experience any shade of climate desired.

While the Park-to-Park Highway is to be a well marked definite route, it is but a nucleus of a great inter-park road system which will eventually be developed. From the big



Photograph by Herbert W. Gleason
THROUGH THE REDWOODS

One of the highways in the territory which it is now proposed to make into the Redwoods Park in California.



Courtesy of National Park Service

MOTORING TO THE NATIONAL PARKS

Here is a road to the Zion National Park, Utah, which leads through a region rich in colorful scenic interest, where reds, pinks and startling whites predominate.

circle route there are a number of arteries of existing highways of scenic or historic importance such as the Columbia River Highway, the Denver Mountain Parks System, the Pikes Peak Highway and the Yosemite-Lake Tahoe loop, which are an essential part of this inter-park road system. The several western states offer exceptional small circle tours within the limits of their respective boundaries. Particularly is this true of Montana whose cross-state roads are being extensively developed.

The motor tourist has not been neglected in the National Parks, for in each there have been established free public camp grounds, where one may bring camp equipment and camp out. The free public camp ground is being extensively developed throughout the West, cities and

towns vying with one another to provide the most attractive camp grounds for their motor visitors.

Let it be said here that the National Forest Reservations, through which access to most of the National Parks is had, offer many attractions to the motor tourist. The Forest Service has actively co-operated in the building and maintenance of park approach roads and has also provided free camp grounds within the Forests. But National Parks and National Forests are inherently different. Com-

provide this information the National Park Service, Department of the Interior, has published circulars of general information regarding most of the Parks, which are available for free distribution. These pamphlets contain the rules and regulations and also contain the authorized rates for all public utilities operated within the Parks.

The motor tourist should also procure a good road map. The National Park Service has available for free dis-



Copyright by Fred Harvey

IN THE GRAND CANYON

No feature of the National Parks is better known than the wonderful Grand Canyon, which no man or brush has yet adequately described. This is one of the zig-zags on the Bright Angel Trail.

plete conservation is the National Park principle; the National Forest principle is conservation through utilization of natural resources by scientific methods. The area of National Parks equals only five per cent of the area reserved as National Forests. National Parks are the recreation grounds of the people, while National Forests may supplement these features by recreational development.

Whether one plans to go by train or motor one should inform oneself beforehand of what is to be seen and to

tribution a small map of the Western United States, showing the location of the National Parks and the Park-to-Park Highways.

EX-FOREST Ranger Robinson was recently quoted in one of the San Francisco papers as follows:

"Fellow named Robinson, who is in the Forest Service up Sonora way, postcards down that the only difference between the modern ranger and the pioneers is that while the latter blazed the trails, the former trails the blazes."

UNCLE SAM'S MOST NORTHERN WOODLOT

BY L. C. PRATT

(WITH PHOTOGRAPHS BY THE UNITED STATES FOREST SERVICE)

THE Chugach National Forest of Alaska has more than the average share of romance common to Uncle Sam's spacious woodlots and playgrounds. This Forest of the far north is the namesake of the Chugach Mountains, which are in turn godfathered by the Chugachamint Indians, a local tribe. The very names of its bays, channels, and islands—Turnagain Arm, Point Gore, Fire Island, Resurrection Bay—suggest the thrill of adventure; a directory of the scattered settlements along the shore, such as Aurora, Seldovia, Hope, Nevelchuck, Sunrise, Roosevelt, Kussiloff, Latouche, Home, and Valdez, would bear the impress of many tongues and signify the dramatic history of the country.

This romantic National Forest occupies a narrow strip of land along the coast of Alaska in the great crescent-

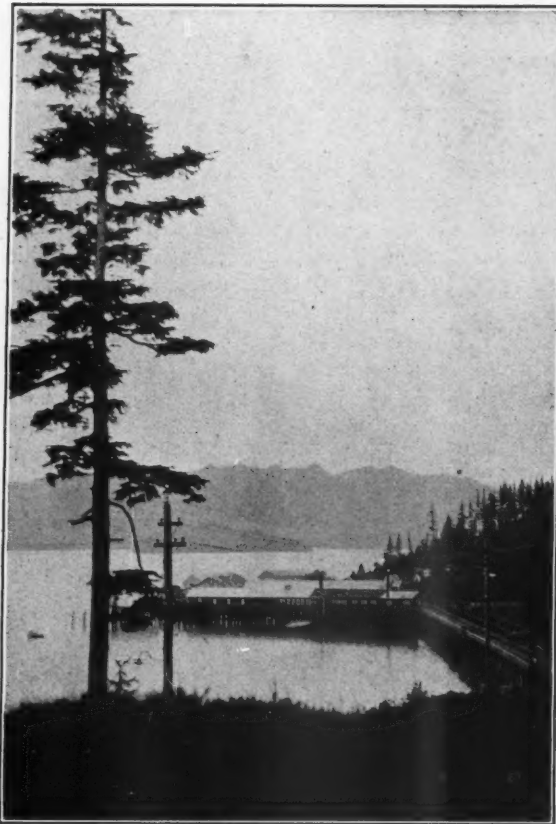
shaped bend formed by the head of the Gulf of Alaska and stretches from Cape Suckling on the east to Afognak Island on the west, with an airline distance of nearly 400 miles between its eastern and western extremities. The great irregularity of the coast, with its countless islands, fiords, sounds, inlets, and canals, gives the Chugach Forest a coast line of more than 3,000 miles. This Forest contained at one time about 12,000,000 acres, but has been reduced from time to time until its present area is a little over five million acres. The headquarters are located at Cordova, a thriving town, which is the beginning of the Copper River Railroad. Rangers are stationed at Cordova, Anchorage, and Katalla.

The Chugach Forest contains a stand of merchantable timber roughly estimated at eight and one-half billion



A LITTLE COLLECTION OF ALASKAN SCENERY

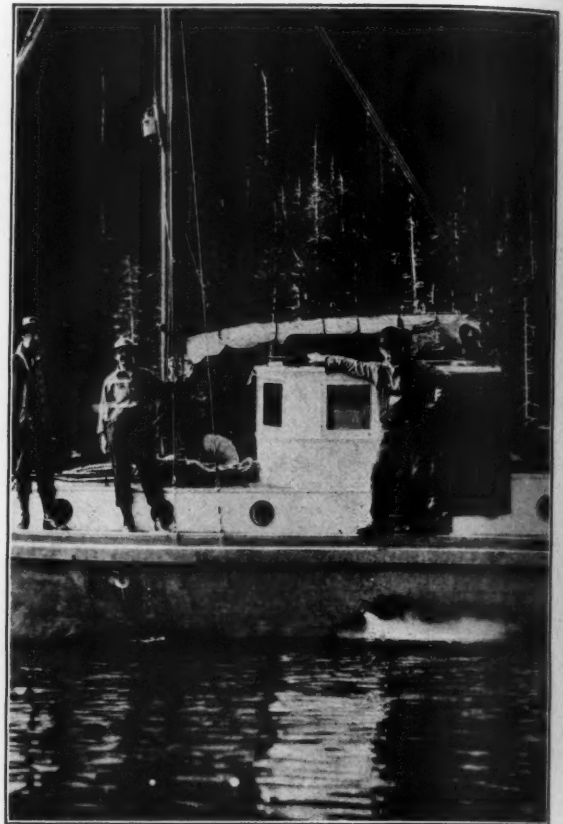
First is shown a typical picture of a stand of virgin timber, after a forest fire caused by carelessness has swept in uncontrollable headway through the country. Then, hunter's lure, in big-game country, but not quite game enough to escape the camera. Below is seen a fine crop of Alaskan tomatoes grown in a ranch hothouse on the Chugach, and lastly we see that the Alaskan pioneer has and uses "spuds" as well as spades. This field of potatoes was grown near Knik, in the Cook Inlet region.



STEAMSHIP DOCKS ON COPPER RIVER

Cordova is a thriving town with railroad and steamship facilities. The town is headquarters for the Chugach National Forest—that public property roughly estimated as holding eight and one-half billion board feet.

board feet. To the early gold-seekers, this great natural wealth appeared to have no value beyond supplying them with logs for their cabins, timbers for their mines and sluice-boxes, and fuel for their stoves. With the development of the Territory the once-despised forests are assuming a more important place, and at present they promise to rival gold in the return of wealth. Native lumber is now depended upon almost exclusively for construction of all kinds in Alaska, and it is beginning to find favor in outside markets, especially the Sitka



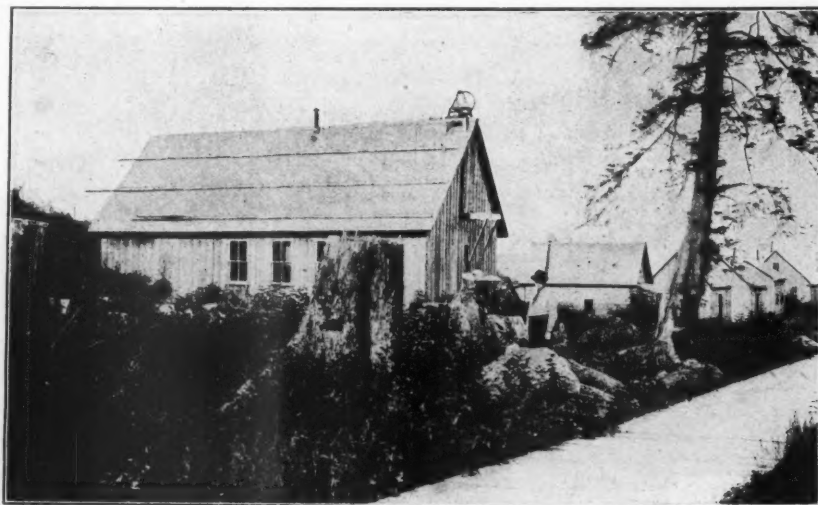
FOREST SERVICE LAUNCH

The Alaskan forest ranger's "bronc," and a most necessary part of his equipment in his work along the extended coast line of the Alaskan forests.

spruce which is exported in considerable quantities.

The sale of mature timber from the Chugach has shown a steady increase since the creation of the Forest. During the fiscal year 1920 individual sales to the

number of 112 were made, covering more than six million board feet. In addition to this, the Alaskan Engineering Commission cut from the Forest under free-use permit the equivalent of over four million board feet in the form of lumber, ties, piling, poles, and bridge timbers, for use in the construction of the Government



THE FLAGPOST OF CIVILIZATION

Hand in hand with railroad construction, such schoolhouses as this are heralding progress in pioneer villages carved out of the wilderness.



ON THE DOCK AT SEWARD

We are apt to think of Alaska in terms of glaciers, blind trails, or gold nuggets. We forget to anticipate the city life which is "on the way."



RUSSIAN CHURCH AT CHENEGA, PRINCE WILLIAM SOUND, CHUGACH FOREST

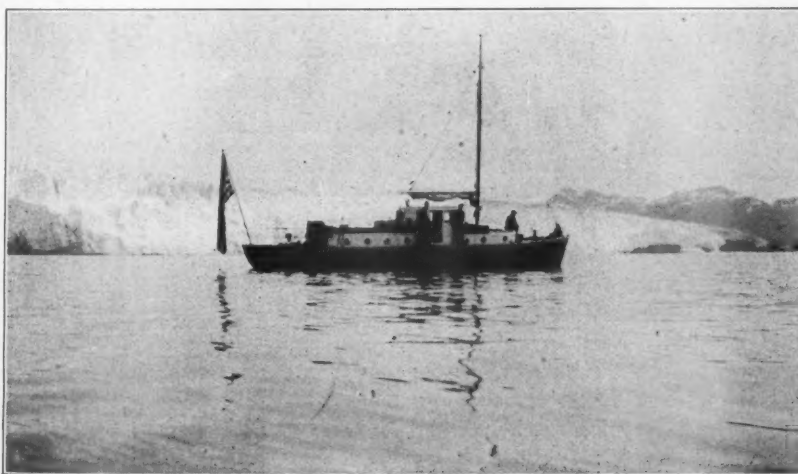
A relic of Russian possession, before Uncle Sam bought Alaska, with her boundless wealth in natural resources, for mere song.

railroad which runs through a portion of the Chugach Forest. There are indications, however, that the greater part of the timber within the Forest will eventually be used for the manufacture of paper pulp.

Under existing regulations of the Department of Agriculture, which provide for the use of land within the National Forests for any legitimate purpose, a great variety of enterprises are carried on within the boundaries of the Chugach Forest. The most important of these is the fisheries industry. The canneries and salt-eries located along the shores of the islands, bays, and inlets of the Forest give employment to more than six thousand men and women dur-

ing the fishing and canning season, and represent an investment of some \$12,000,000.

Perhaps no territory under the "Stars and Stripes" offers greater attractions to the sportsman and trapper than the coast of Alaska. Kenai Peninsula is visited annually by big-game hunters from many parts of the world. Within the Chugach Forest are to be found the



THE "STARS AND STRIPES" AT HOME TO COLUMBIA GLACIER

The "Restless," headquarters boat of the Chugach Forest, is an essential part of Forest Service equipment in this land of persistent coastline and diversity of transportation necessities.

moose, deer, mountain sheep and goat, brown and black bear, ermine, mink, marten, land and sea otter, fox, wolverine, beaver, ground and tree squirrel, rabbit, porcupine, muskrat, ptarmigan, grouse, duck, goose, swan—is it necessary to complete the list?

This Forest formerly con-



TO THE HUNTER BELONG THE SPOILS

Big-game hunters naturally migrate to this country regularly for here is found sport of the finest in the hunting of moose, deer, brown and black bear, ermine, mink, land and sea otter, fox, marten, mountain sheep and goats—the list is too long to complete.

tained some fairly large areas of land suitable for agriculture, but these tracts have been eliminated from the Forest and restored to the public domain. However, the Chugach still contains some small, isolated areas which have agricultural possibilities, and these are subject to homestead entry under the Forest Homestead Act of June 11, 1906. Where a settler desires to use for gardening a tract which is not large enough to form a practicable farm unit, he may secure the use of it by applying for a special-use permit and paying a small annual rental therefor. Many small tracts are being occupied and cultivated under this arrangement.

Other uses include residences, temporary camps, hotels and roadhouses, sawmills, railroads, parks, schoolhouses, tramways, wharf and boathouse sites, and fox ranches. There are now twenty-four fox ranches within the Chugach Forest, located on the islands about Prince William Sound. Here the animals are liberated and raised practically in the wild state. These ranches export many furs, and fur farming is becoming a really important industry. In all, about 60,000 acres of land

is occupied within the Forest under special-use permits of various kinds.

Although less than 30 degrees from the North Pole, the climate of south-central Alaska is very mild, the temperature seldom registering below zero. The mean annual temperature for Prince William Sound is 38 degrees Fahrenheit, and it is warmer during the winter months than at any other point in the world in similar latitude. The temperate climate is due largely to the beneficent influence of the Japan Current which sets into the head of the Gulf of Alaska.

The eastern part of the Forest, from Cape Suckling to the divide between Prince William Sound and Cook



UNCLE SAM'S FOREST HEADQUARTERS

Even in near-Arctic Alaska, the forest supervisor is housed with the simplicity and rustic comfort befitting his position as the guardian of the outdoors.

Inlet, lies in a latitude of exceedingly heavy rainfall, with an average annual precipitation of more than 100 inches for the district and a recorded maximum of 189 inches. Forest fires are unheard of in this section.

The region of upper Cook Inlet and Kenai Peninsula, however, offers entirely different climatic conditions. Being farther from the open sea and consequently less subject to oceanic influences, the precipitation here averages only about 20 inches a year; and forest fire conditions are similar to those existing in some of the forested areas of the Pacific Coast States. The fire season begins almost as soon as the snow is off, generally in May, and continues until the fall rains commence in late August

or early September. It is necessary to employ a force of smoke-chasers and patrolmen during the fire season in part of the Forest. During the five-year period, 1916-1920, 121 fires occurred within the Forest in this region, burning over 7,442 acres and destroying timber to the value of \$4,257. The majority of these fires occurred along the right-of-way of the Government railroad, which starts at Seward, on the south end of Kenai Peninsula, and will extend northward 467 miles to Fairbanks when completed. One forest fire in 1919 destroyed railroad property to the value of \$125,000.

With the exception of a few areas in the Cook Inlet region, the topography of the Forest is exceedingly rugged, the mountains often rising abruptly from the sea. On Resurrection Bay the towering peaks seem to reach into heaven. Timberline is usually at an elevation of about 2,000 feet; above this rise barren, glaciated peaks ranging from 3,000 to 8,000 feet in elevation.

The Chugach Forest contains some of the most sublime scenery to be found anywhere. Glaciers, snow-capped mountains, forested islands, and tree-bordered lakes and bays are abundant. Unfortunately, much of it is now inaccessible to the average tourist. The summer visitor on the regular routes of travel, however, may see the wonderful Miles and Childs Glaciers and enjoy the gorgeous mountain scenery along the Copper River & Northwestern Railroad, some fifty miles from Cordova. Here two giant glaciers almost face each other from opposite sides of a great river. The front of each is more than two miles long, sheer ice-cliff rising vertically in places more than 300 feet above the surface of the water with background of mountain masses towering in awe-inspiring grandeur. These glaciers vie with each other in activity during the summer months, and the roar of the ice breaking and tumbling into the waters can be heard for miles. Frequent summer excursions are run from Cordova to the glaciers over the Copper River Railroad to witness the brawling Virginia Reel of the liberated waters in restless vis-a-vis.

UNFAMILIAR SCENES IN NATIONAL PARKS

(Continued From Page 355)

The coloring of the Grand Canyon is a subject over which most visitors wax enthusiastic. But in depth and vividness of color the Grand Canyon does not equal Zion Canyon in southern Utah. On the north fork of the Virgin River there is a remarkable canyon, only twelve miles in length and less than half a mile in width, which so impressed Brigham Young when he visited it many years ago that he called it "Little Zion." In 1909 it was proclaimed a national monument under the Indian name of "Mukuntuweap," and on November 19, 1919, Congress created the Zion National Park which includes this canyon as its principal feature. The vertical walls, which rise from two thousand to nearly four thousand feet above the canyon floor, are of a red sandstone formation, highly colored in shades of Indian red and terra cotta

over their lower strata, while the upper are much lighter, approaching a cream white, and this again is overlaid in places with a deep pink formation. The rock-sculpture is by no means uniform, but there are sharp pinnacles, rounded domes, bold headlands, and retreating angles,—the whole exhibiting a most pleasing variety. At the upper end of the canyon the walls approach so close to each other that there is only room for the dashing torrent at their base. Although one hundred miles from any railroad point, Zion Canyon is easily reached by automobiles over most excellent roads; and as soon as its wonderful cliff scenery and brilliant coloring become more generally known it will take its place on the "familiar" list of our national parks.

The whole region contiguous to Zion Canyon abounds in striking rock formations, often with intense coloring. This is the country of the "Vermilion Cliffs," the White Cliffs," and the "Pink Cliffs"—belonging geologically to the Triassic, the Jurassic, and the Eocene deposits,—and at various points where the forces of erosion have had their way, such as the so-called "Cedar Breaks" and "Bryce Canyon," there is a display of most astonishing rock-sculpture combined with a depth and variety of color almost incredible. Bryce Canyon is already proposed as a national park, which, in its final status, will doubtless include other similar areas.

Just a word as to the other national parks not thus far noted. The Hot Springs Reservation in Arkansas was the earliest of the national parks to be created—the date being April 20, 1832,—and has long been famous as a health resort of great value. Wind Cave Park in South Dakota—an extensive underground cavern of unusual interest,—Platt Park in southern Oklahoma—another health resort,—and Sully's Hill Park in North Dakota—an important wild animal preserve,—are areas of small extent and chiefly "familiar" only to residents of the immediate neighborhood. The Hawaiian Park on the Hawaiian Islands and Mt. McKinley Park in Alaska are recent creations, not yet made the subject of development, and their remoteness will doubtless for many years place them beyond the travel scope of the great majority of the American people.

To become familiar with our national parks—at least, to a certain degree—is the duty, as well as the privilege, of every American citizen. They are among our most precious possessions as a nation. We term them "the people's playgrounds," but they are very much more than that. We have not yet begun to realize what an important part they are destined to play in our educational system, furnishing, as they do, object lessons of incalculable value of the operation of those world-building and world-beautifying forces about which we study in our schools; while their aesthetic and moral stimulus is sure to be increasingly appreciated as the years go by. To preserve them inviolate for future generations, and to resist to the utmost every movement directed even in the slightest degree toward their commercialization, is the sacred obligation resting upon every member of this republic.

REFORESTATION IN THE MIDDLE STATES

BY WILLIAM EDWARD HAYES

THE successful reforestation of the Middle States is a matter which now lies mostly in the hands of the United States Government. This is what present indications in the States of Ohio, Indiana and Illinois point to. State officials in these three States have used every means possible to bring before the minds of the people the very serious fact that the natural resources were swiftly becoming depleted. These officials have had a

lands for the purpose of getting pasture space, and they are now setting about to raise the timber they use in fence posts and joist.

The Ohio farmer is about the same thing. Hundreds of thousands of acres in the State of Ohio which have been lying idle in the past years will soon be taken over, and reforestation started. At least this is planned, and like in Indiana and Illinois, it will be necessary to have some assistance from the federal government.

These three States have enjoyed good roads which they could not have dreamed of were it not for the fact that the federal government took care of a certain financial burden which helped carry on the good roads work.

It is exactly the case in the reforestation problem.

National Forests in the East have been bought by the government, and a strip of forest land will soon extend half way through the southern Appalachian region, com-



ON THE STATE FOREST RESERVE

This is a view of a part of the Ash tract, showing the excellent growth of these trees. The Ash is probably the most hardy of any specimen in the forest.

long, hard fight to convince the farmers that the timber question was a grave one.

The farmers are now convinced. For the most the legislators in these States are now convinced. The Farmers' Federation in the State of Indiana, after having been told of the critical need for reforestation in that State despite the fact that it ranked third in the union in agriculture, has taken a definite stand in favor of providing a means for the revival of the famous hardwood forest for which Indiana was noted for many years.

The farmers of the State are now engaged in doing just those things which have been brought before them. They have stopped the wanton destruction of their wood-



RECKLESS SPOILIATION OF THE WOODS

This photograph shows a condition which had to be fought in Indiana and Ohio where timberland was being utterly destroyed for the purpose of getting grazing lands.

prising of the States of Virginia, West Virginia, North and South Carolina, Tennessee and Georgia. The National Forests are already firmly established in the States west of the Mississippi River.

In the Middle States no federal provision has as yet been made to assist in the work of reforestation. Illinois,

Indiana and Ohio are ready to co-operate with the national authorities on this question.

The progress of reforestation in Ohio and Indiana has been somewhat in advance of that of Illinois because Illinois was late in getting started. Much tribute, however, is owing Illinois for what she has accomplished under a severe handicap.

The situation in Indiana, while still serious, is now getting to the point where much is being planned in future

After most careful management through the years this two thousand acre tract is today the largest and the most successful State owned hardwood experimental station in the United States.

With some of the plantings winter killings were experienced, but expert care in pruning and coppicing has proven beyond doubt that the reforestation problem in Indiana is but a matter of securing enough acreage to get at it on a reasonably large scale.

The State conservation department is at work now sending out data weekly to the State legislators informing them of the seriousness of the situation and also keeping them closely in touch with the success of the present State forest.

It has been intimated in political circles that the matter of State forest acreage will be given especial attention at the next session of the general assembly, and it is



THE ADMINISTRATION BUILDING

This is the headquarters of the Administration force on the grounds of the Indiana State Forest. It is made of logs and most attractively finished.

policy. It is true that the Hoosier State has been lax for several years after her vast forests of the world's most famous hardwood were practically wiped out. The tremendous influx of big business is partly responsible for this, but most of all the excellent agricultural advantages which were to be had by the fertile soil brought about, not a wise, but a wanton destruction of timberlands some years ago.

Recent estimates by the Indiana State Department of Conservation give out that Indiana acreage now totals some twenty-two million, and of this there are not more than two million acres of good timber land remaining. This woodland area of the State is widely scattered, and is usually found in very small tracts.

The first State forest in Indiana was acquired in 1903 when the State legislature provided funds for the buying of two thousand acres of land in Clark County for experimental purposes. The cost was less than one thousandth of one cent per capita.

This land was then divided into eighty-four tracts, consisting of from one to ten acres each, and in 1904 the first work of planting was begun. Specimens of white ash, black and red oak, yellow poplar, black walnut, black locust, chestnut, catalpa, hickory, elm, sycamore, wild cherry, Scotch pine, cottonwood, European larch, Norway spruce and sugar maple were put in.



FINE SPECIMEN OF THE COW OAK

This tree (*Quercus Michauxii*), is very rare as far north as Indiana, but it is growing splendidly in the Klein woods, four miles north of North Vernon.

expected that Indiana will then be able to carry out to a great measure the extensive plans which have been formulated.

The press, one time somewhat opposed to the idea of taking good soil and turning it back into forest, has

changed entirely in sentiment since the ushering in of the acute paper shortage, and the changed attitude of the Hoosier newspapers has also been largely responsible for the trend in public opinion.

Indiana and Ohio are unanimous in the belief that the forest preserves should link up closely with the game preservation, and should also be used as natural recreation grounds. Forests in these States would serve to provide a place where the citizens would be able to secure camping out privileges much more advantageous than those which are now at their disposal under private control. And it cannot be denied that when the State forests are used for recreational purposes, it attracts people to them and this would provide not only education to the citizen in forestry but in game and game preservation.

Ohio has now two city forests, one in Cincinnati and one in Oberlin, and is continually urging that cities acquire their own forests as every opportunity is open for such action in the Buckeye State.

Ohio has been successful in her two experimenting stations, and every indication now points to a vast and extensive reforestation program for the coming year.

Summing the conditions in the three great States of the Middle West, it is found that despite the fact that these States are among the leaders in agriculture, production and manufacturing, they are ready and willing to go ahead with a reasonable reforestation program because they realize the seriousness of the situation.

They realize that they are paying higher prices than ever before in history and that they are having to import the very building materials which they at one time raised and supplied the needs of the outer world with. These States are awakened to the fact that it takes co-operation to make the plans they have formulated a reality. They know that another generation is coming, and they understand that this generation



A GOOD EXAMPLE OF WHAT CAN BE DONE

This view of the woodland on the Indiana State Forest Reserve shows second growth of white oak and the sturdy planting proves conclusively what careful management and care can accomplish in but a few years.

must be supplied with the substance which has been almost wiped out in the shape of timber.

But, as has been said, the co-operation of the people, the municipalities and State officials is not sufficient. The Middle Western States must have the help of the federal government, as they received in the highways program. With this firmly established, the reforestation problem is solved, and future generations will be amply provided for.

FOR the purpose of laying out summer camp sites in the northwestern portion of the Olympic National Forest, F. W. Cleator, special landscape officer, has been permanently transferred from the district forester's office in Portland to the local office, according to R. L. Fromme, supervisor of the Olympic National Forest.

THE forests of British Columbia in 1920 yielded products to the value of \$92,628,807, an increase of \$22,000,000 over 1919.—*Conservation.*

THE list of men who passed the U. S. Civil Service examination last October for the position of forest ranger on the National Forests of Oregon and Washington has been received at the Portland office of the Forest Service. This is the result of an annual examination held to secure a list of men qualified to become protectors of the timber resources belonging to Uncle Sam in these two states. The 1921 list shows 15 men in Oregon passing the examination and 17 in the State of Washington.

WASHINGTON'S FOREST CATASTROPHE

BY HEISTER DEAN GUIE

THE greatest forest disaster in the history of the State of Washington occurred January 29 when a tornado, traveling 160 miles an hour, swept the Olympic Peninsula, falling eight billion feet of virgin standing timber. The path of the storm was over 70 miles long and 30 miles wide, devastating 2,200 square miles of territory in western Clallam and Jefferson Counties. One-third of the forest growth in these two counties was flattened to the ground, 25 per cent of it so twisted and splintered that it cannot be salvaged. In the Hoh River district 75 per cent of the timber fell in the hurricane, according to an eye-witness, who declared the mammoth trees bordering the Hoh and Bagachiel Rivers were mown down like grain.

The famous Olympic Highway suffered incalculable damage between Fairholme, on Lake Crescent, and Mora, on the coast, a distance of 42 miles. Some portions of the road were not affected but others felt the full fury of the terrific gale, which blew down great trees by the hundreds along what was formerly one of the most beautiful highways in the Northwest. In many places it was possible to see for miles across the storm desolated areas adjacent the road, where, before the disaster, primeval stands of magnificent timber kept out the sunlight.

Trails and telephone lines were obliterated and ranch buildings shattered. Six frame houses at the Indian village of La Push were destroyed and others seriously damaged. Isolated settlers were so completely cut off from communication with the outside world that many of them killed their horses and cattle because they could not bring feed to them. Labyrinths of fallen trunks blocked roads and trails for miles. Travel was so laborious and slow that it took five days for the man bringing the first news of the disaster to Port Angeles to traverse the distance usually covered in a few hours.

As far as could be ascertained within two weeks following the storm no lives had been lost, but there were several narrow escapes. Five miles from Forks, near

the center of the storm area, the automobile of a rural mail carrier was demolished by a tree a moment after the mail carrier and a companion had deserted it. The men escaped by crawling for a mile under fallen trunks.

A truck driver, caught in the hurricane, left his truck and ran through tumbling trees for a quarter of a mile to safety. After the storm he returned to find his truck buried beneath branches and debris but unharmed. Settlers worked with him for eleven days cutting out down timber, removing 670 trees from the road in a distance of two and a quarter miles.

Much wild life undoubtedly perished, in the opinion of veteran woodsmen and inhabitants of the devastated districts. Five thousand elk roamed the territory swept by the storm. Half of them are believed to have been killed by falling trees and by being trapped in tangles of down trunks, where they starved to death. To protect the survivors, the State Legislature—in session until March 10—was urged to extend the closed season indefinitely. Under existing game laws, elk may be shot this coming fall for the first time in years. Extension of the closed season would not only conserve the elk, but would keep out many hunters whose presence in the ravaged districts would augment the fire menace during dry weather.

Ten days after the storm, Governor Louis F. Hart, accompanied by State and federal forest officials made an automobile tour of inspection the length of the Olympic Highway, their machines following in the wake of road crews, who sawed hundreds of trees to open the highway for the official party. The havoc wrought by the tornado appalled and saddened everyone as the extent of the catastrophe was realized.

The inspection tour impressed upon the governor and forest officials the necessity of immediate action to prevent a holocaust this summer. A fire once started in the down timber would sweep the whole territory, fighting operations being impossible because of the tangled condition of the country. Measures contemplated to reduce the fire menace as much as is humanly possible are the



THIS SHOWS THE MAJESTIC BEAUTY OF THE OLYMPIC HIGHWAY NEAR FORKS BEFORE THE STORM



SPLINTERED AND UNFIT FOR SALVAGE. TWO SECTIONS OF A MIGHTY TREE BROKEN BY THE TORNADO.



A VICTIM OF THE STORM. THE ROOTS OF THIS FALLEN GIANT ARE THIRTY FEET ACROSS

creating of safety zones by burning strips 200 feet wide on both sides of all the roads in the region, the establishment of intensive patrols and the regulation of campers and tourist travel. Motorcycle patrols will probably be used to watch the activities of automobile tourists on the Olympic Highway between Fairholme and Mora. No fires nor over-night camps will be permitted except at designated spots.

A proposed plan to burn over the entire storm-wrecked region, on the ground that the fire would destroy the undergrowth and debris and not injure the fallen and stand-

trolled burning to timbered districts not touched by the tornado.

Salvage of the undamaged portion of the fallen timber is the gigantic task confronting the State and federal forest officials and private corporations. Forced logging will be necessary to save the spruce and hemlock, which deteriorate quickly, decay commencing two years after such trees are on the ground. Sixty per cent of the forest growth in the region is hemlock. The cedar and fir occasion no worry as they last indefinitely.

The greatest fire trap known in the history of the



THE SAME SPOT ON THE FAMOUS OLYMPIC HIGHWAY—AFTER THE STORM. A WAY WAS CUT THROUGH FOR THE GOVERNOR'S PARTY

ing timber met with the disapproval of old-timers, residents of the Peninsula. They pointed out that if the district is burned over this spring there is every chance of down hemlocks retaining smouldering fires for several months, which fanned by a brisk breeze in the dry season would burst into flame and start a terrible conflagration. Records of the past ten years show that every forest fire of any seriousness in the Peninsula began with hemlock logs that had been in spring slash fires. There are also enough trees left to make a wholesale burning very dangerous. The possibility of crown fires might easily result in the spreading of the intended con-

United States resulted from this cyclone, says officials of the United States Forest Service.

"If fire should ever gain headway in this devastated area, the most stupendous conflagration ever known in this country would result," said Acting Forester E. A. Sherman, in discussing the disaster. "The topography is very broken and the blow downs are in part at least known to be 'spotty,' with much fine timber uninjured. Fire would not only destroy all these islands of timber, but would seriously endanger a vast surrounding stand. Fifteen billion feet is exposed in the adjoining part of the Olympic National Forest, besides

large amounts on State and private lands. The destruction would be likely to exceed even that of 1910, the most appalling fire season ever encountered by the Forest Service, when over 4,000,000 acres of National Forest land were burned over in the West, and 6,500,000,000 board feet of timber, valued at nearly \$15,000,000, was lost."

To meet the emergency the Secretary of Agriculture requested the Secretary of the Navy to detail hydroplanes for an air survey of the storm-swept region in order



SEVEN FEET IN DIAMETER AND SIXTEEN FEET HIGH. NO TRACE OF THE REST OF THE TREE COULD BE FOUND ALTHOUGH THE FOREST WAS SEARCHED FOR SEVERAL HUNDRED YARDS IN THE VICINITY OF THE STUMP

that the amount of damage might be determined, since it was impossible to traverse the uprooted forests on the ground. A request has also been made to the Secretary of War that the railroad constructed by the Spruce Production Corporation, extending from Port Angeles to Lake Pleasant, on the Olympic Peninsula, be equipped with rolling stock and operated at its maximum capacity. This railroad is the one important line of communication into the devastated area, and will afford a means of salvaging a considerable amount of the down timber.—(Photographs by Webster and Stevens, Seattle.)

F. R. INGALSBIE, mineral examiner for the forest service in Montana and Idaho, has resigned his position to enter private practice.—*The Missoulian*.

NEWSPAPERS AND FIRE PREVENTION

ABURNING cigarette butt beside a woods-road in northern Maine may mean much to the business management of the Texas Daily Bugle. Sounds like a joke—but is it? The Daily Bugle, say specialists of the Forest Service, United States Department of Agriculture, represents the newspaper industry dependent on forests for its existence; the smouldering cigarette portrays forest fires caused by human carelessness. Newspaper is made from wood. Fires destroy the forests and lessen the supply of raw material with a resultant increase in the price of paper stock. Hence, the relation between the cigarette butt in Maine and the newspaper in Texas.

This is the day and age of newspapers. There are in this country 21,000 papers with a total daily circulation of over 28,000,000 copies. Sixty dailies have a circulation exceeding 100,000 copies each, and one Sunday paper claims 1,000,000 circulation. Newsprint is a 100 per cent product of the forest, but few persons stop to think that there is real relation between their daily paper and the problem of forest protection.

The paper industry of the United States uses about 5 1/2 million cords of wood a year. This is equivalent to from 40 to 80 years' growth of timber on approximately 500,000 acres of forest land. No concerted effort has been made to replace the amount taken from the forests, and the yearly drain has depleted the capital stock to something like 50,000,000 cords of spruce, the most desirable wood, in the regions of centralization of the pulp and paper industry. This indicates only a little more than 10 years' supply in sight, and it is predicted by the Forest Service that within this period the paper mills of the Northeast and Lake States will be hard put to secure pulp wood to keep their mills and machinery busy.

The pulp and paper industry is at present centered in the New England States, New York, and, to a lesser extent, in the Lake States. The bulk of raw material, exclusive of some 1,300,000 cords of pulp wood imported from Canada, comes from these States. During the past five years 25,000 forest fires in these regions burned over more than 4-1/4 million acres and occasioned a loss of \$33,850,000. The damage done to pulp-wood stands by these conflagrations amounts to a staggering total.

In the use of our forests to provide material for the industrial development of the Nation, fire and devastation have usually followed lumbering, instead of the desired and natural reestablishment of forest cover. Fire has taken the rejuvenating life out of some 81 million acres of our forest land, and, practically unhampered by man, has played pranks with the wood-using industries. The "red plague" continues to spread year by year, largely through the carelessness of campers, loggers, settlers, and railroads. From 60 to 80 per cent of the annual forest fire loss is due to human agencies and is, therefore, preventable. The newspapers of the country have been hampered by the extremely high prices of paper, and one of the underlying reasons for this increased cost is our diminished supply of pulp wood.

FOREST RECREATION DEPARTMENT

ARTHUR H. CARHART, EDITOR

VACATION LAND

TO one seeking knowledge of Oregon's National Forest playgrounds there is no better general guide than the booklet "Vacation Land" published by the United States Department of Agriculture. The book takes rank with the best of Forest Service pamphlets which tell of the great recreation areas within the National Forests.

The pages of the booklet number over seventy and within the back cover is found a map of the National Forest lands in the State of Oregon. The remainder of the book is filled with interesting sketches of the forests and much general information.

Among the sentinel peaks of the West Coast Mount Jefferson stands majestically with snow crowned head. Within the cover of "Vacation Land" and as a fitting prologue to what follows is a photo portrait of this venerable member of mountain nobility. Turning the page on which Mount Jefferson is depicted will reveal the

first page of the text opposite which is a list of the National Forests of Oregon, the names of the Supervisors of each forest and the towns which are the forests' headquarters.

The opening paragraph of the text beckons to one so enticingly that the reader feels "Wanderlust" calling him from daily tasks. "When tired of the daily grind, you say to yourself, 'I need a vacation,' your first thought is to get away from civilization and its trammels. You next are to find interesting and health-giving recreation. In the National Forests of Oregon you will find both and much besides. . . ."

Following this is a sketch of what the forests of Oregon offer to the vacation visitor. General conditions in these forests are discussed under a separate heading and then follow pages of good accurate information regarding each forest of the state. The area of the forest is given in each case, the location, and the topography



MOUNT JEFFERSON, IN THE SANTIAM NATIONAL FOREST

This mountain in Oregon has exceptional beauty. Good trout streams are plentiful, waterfalls glisten in settings of green, and the lure of Oregon and her forests soon captivates one.

mentioned. The higher peaks are named and elevations given. Waterfalls, lakes, cascades and other special features of the forest are told of in short paragraphs or sentences. Each of the sixteen National Forests in the state is thus outlined and one seeking a vacation territory will find many things told of in each forest biography which will invite him to visit them.

Beginning on page fifty-three and continuing for the remainder of the booklet is general information of interest to a camper or tourist wherever he may be going on a trip. General rules for fire prevention are given. Personal equipment, outfit and clothing are next outlined after which is found a ration list for one man for one

day with equivalent substitutes. Camp equipment for various sized camps follows and some simple camp cookery is included. Sanitation, packing, handling game, distress signals, first aid and a brief discussion of the administration of National Forests complete the publication.

For one who wishes to secure information on Oregon's National Forest playgrounds the book is invaluable. To those who seek general information on camping the book offers many good suggestions. "Vacation Land" is worthy a place in any library. Copies may be secured as long as the supply lasts by writing the District Forester, Portland, Oregon.

OTHER LITERATURE ON OREGON'S NATIONAL FOREST PLAYGROUNDS

"ROAD and Recreation Map—Oregon." A map, 23x36 inches, of the state of Oregon showing the main auto roads of the state and the principal scenic points. On the back of the map is printed information regarding recreation areas in and near the National Forests of Oregon.



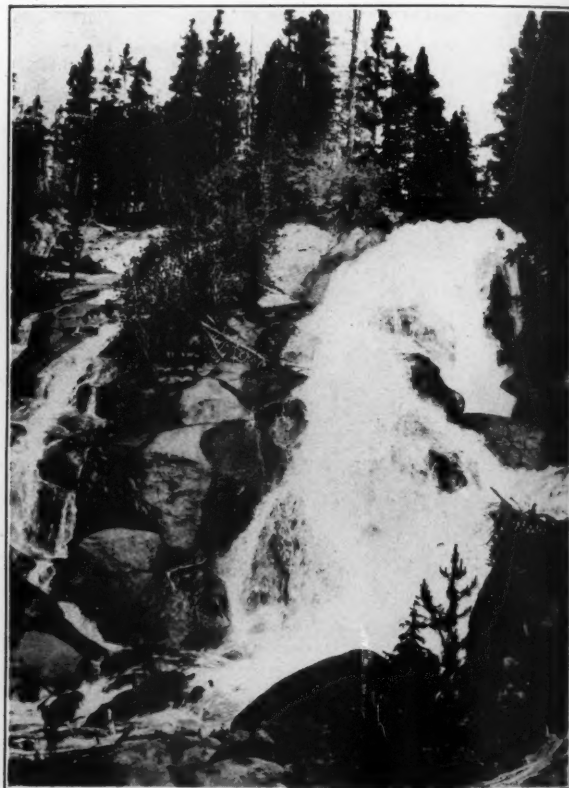
A WATERFALL KNOWN TO LESS THAN A DOZEN PEOPLE

The recreation capital of the nation contains many such landscape details as fine as this one found in the Pike National Forest, known as "Kathlyn Cascade."

"Handy sized card log of the Columbia River Highway." A very practical guide to one traveling the High-

way from Portland to Eagle Creek Camp Grounds.

"Recreation in the Southern Cascades." A guide map of the Crater National Forest. Valuable to the person



NORTH BOULDER FALLS IN THE COLORADO NATIONAL FOREST

Known by many, but there are hundreds of other water features as beautiful which have only a local fame, like the exquisite little Kathlyn Cascade.

planning a trip to Crater National Forest and Crater Lake National Park. Shows trails, roads, camps, etc.

"Map of Columbia Gorge Park, Oregon National Forest." Gives in detail a map of the region along the famous highway. Columbia Gorge Park is 13,873 acres in extent and although a part of the Oregon National Forest

has been set aside by the Secretary of Agriculture (on July 27, 1915) as a public playground, forever to be dedicated to the "use and enjoyment of the general public for recreational purposes."

Any of the above may be secured, so long as the supply lasts, from the District Forester, United States Forest Service, Portland, Oregon.

"Log of McKensie and Williamette Highway." A book or road logs covering the scenic drives around Eugene, Oregon. Material for the booklet secured by United States Forest Service and published by the Eugene Chamber of Commerce. Valuable to the tourist and traveler in this portion of Oregon. Write the Chamber of Commerce, Eugene, Oregon, if a copy is desired.

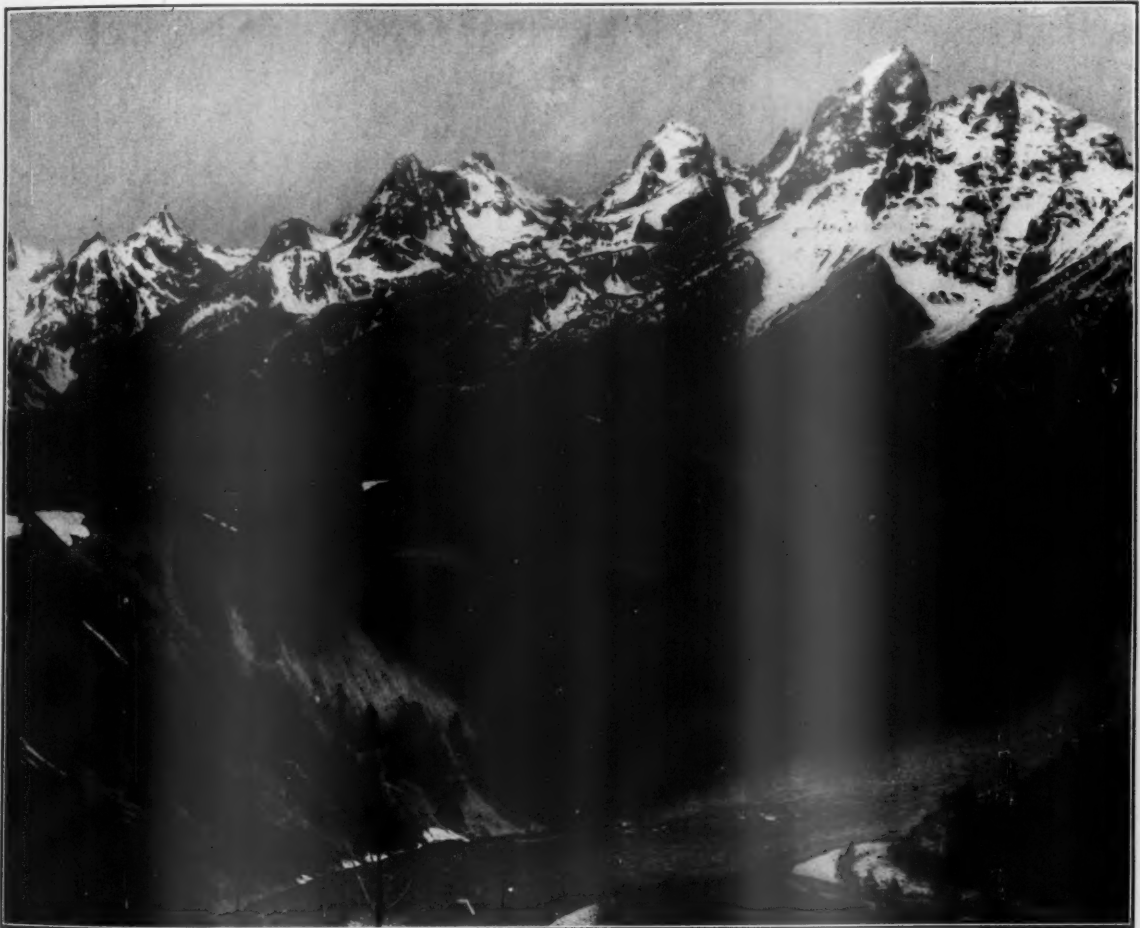
THE LOFTY TETON PEAKS

BY C. A. MCCAIN, SUPERVISOR, TETON NATIONAL FOREST

TO the pioneers of our western country, and to the historians and students of the lore of their wanderings, the Teton Peaks of Western Wyoming were long ago recognized as familiar landmarks. Although the exact date of their discovery by white men has been lost in the obscurity of ages, we have record of their mention over a century and a half ago and that they were given their name by the French trappers of those early days. John

Colter, the discoverer of the wonders of Yellowstone National Park, guided his steps to the Tetons in 1807, and the Astoria Expedition hailed the peaks with relief while floundering through the wilderness in 1811.

In that distant period, and for a long time yet to follow, white men visited the locality for two purposes; to explore new country and to trap and barter for furs. The lofty Tetons served as a milestone announcing the



U. S. Forest Service

THE AWE-INSPIRING MAJESTY OF THE TETON RANGE

A long-familiar landmark to the pioneers of our Western country, the Teton range brings revelation to many a tourist of today. Picture a chain of beautiful lakes, encircled on one side by an open forest of pine and on the other by stupendous granite walls, their waters the temperature of the melting snows from which they spring, their crystal depths reflecting the mighty giants that tower above them, and you have the essence of perfection in vacation country—the sheer beauty of the Teton National Forest.

last lap of their journey, the pinnacle from which the waters beyond flowed toward the Pacific. In this day and age our Argonauts flock westward seeking relaxation from the cares of business, an opportunity to enjoy an outing in the big outdoors, health—and the rugged giants still mutely proclaim the goal of their endeavors! For the Teton National Forest, whose waters flow to feed two oceans, abounds in scenic attractions that make it a vast national playground, the favorite portion of which is formed by the Teton Peaks and their immediate environment.

Picture a chain of beautiful lakes encircled on the one side by an open forest of pines and on the other by sheer walls of granite, their waters of the temperature of the melting snows from which they spring, their crystal depths reflecting the mighty peaks that tower over a mile above them, and you have the message that the Tetons now convey. Everything that the tourist may crave is here provided.

Although on the map this chain of lakes shows an almost straight and continuous line some twenty-five miles in length, each is indented into the rugged barrier of the mountains and secluded from its fellows. Leigh Lake, String Lake and Jenny Lake flow one into the other; Jackson, Bradley, Phelps and Taggart Lakes are independent units of the chain. Varying in size and contour, from Jackson Lake some twelve miles in length, to Bradley with its less than a mile, each has many individual attractions, and all blend together to form a pleasing memory for the visitor.

The bracing quality of the atmosphere—the lakes are nearly seven thousand feet above sea level, the peaks about the same distance higher still—full of the fragrance of the pines and stirred by cool breezes from the water, make the region delightful for the camper in summer. Fish may be caught in plenty, either from the shore or by trolling from a boat or launch. Cutthroat trout are native to the

The Call of the Great Outdoors

By John Jordan Douglas

*Oh, I am off to the call of the World,
Where the winds blow fresh and free;
And the banners of youth are still unfurled
From the hills to the shining sea.*

*Oh, I am off with a Gypsy's joy,
Where the clouds and the trees are wed;
With the romping heart of a barefoot boy,
With cheeks like an apple red!*

*Oh, I'm away with the swift-winged bird,
Away from the city's throng;
And the fettered wings of my soul ungird
To the thrill of a new-born song.*

*Oh, the whirl of the wheels and the wine
of the flight,
The touch and the tang of the road;
And I drink to the nation's magic might
In the outworld's wide abode!*

—Reprinted.



U. S. Forest Service

CAMPERS ON THE TETON NATIONAL FOREST

No more beautiful region for a summer outing can be found, and there are none more popular with those who have paid it a visit. In the shadow of the mighty Teton range are found camping grounds not to be excelled. The bracing quality of the atmosphere, the fragrance of the pines, the beauty of the distant hills all conspire to lure the tourist and lull him to forgetfulness of cities and the ways of business he has left behind.

waters, although the giant mackinaw and other species are almost as numerous.

On the side next to the mountains, the shore line of each of the lakes is precipitous, as the peaks rise directly from the water. On the side across from the Tetons, however, the contour is smooth and the slope is very gentle from the level of the surrounding country to the water's edge. Here the timber grows to the shore line, and as the view from this side of the lakes is magnificent it is the favorite of the camper. Where roadways have been opened one may drive to the shore with a car. Tourists in transit through the valley invariably pause at one of these camping spots for a wayside picnic, and during the height of the season the lake shore is dotted here and there with the tents of those who have decided to prolong their stay. Fishing, boating, picking berries, or just plain loafing, the time never hangs

idly on their hands. Upon this near view the Tetons assume gigantic proportions, dwarfing into insignificance less prominent features. A glacier of a hundred feet in thickness near the summit will look the size of a pocket handkerchief. The cascades and waterfalls that plunge

down toward the lakes resemble silvery ribbons rather than mountain torrents. The canyons and chasms that separate each of the peaks from its fellows appear as narrow clefts where they can be distinguished at all. The view of the peaks is deceiving in almost every respect

save one; they look hard to climb, and to do so is an almost impossible task, as the many futile efforts bear witness. Unlike the Alps, there is no corps of guides waiting to convoy tourists to the summit of the Grand Teton, and their absence is not regretted. The tourists are awed by the stupendous grandeur of the peaks, take pictures of them to show to the folks at home, but feel little desire to risk their necks in an attempt to scale them.

Many people from the eastern cities spend the entire summer in this vicinity, either maintaining their own summer homes or staying at one of the several resort ranches nearby. Here they secure saddle horses and explore the



U. S. Forest Service

A TYPICAL VISTA IN THIS DELIGHTFUL VACATION LAND

The tourist is awed by the stupendous grandeur of the peaks, usually takes many pictures, but feels little desire to risk his neck in an attempt to scale the heights, which, by the way, is almost impossible of accomplishment. The Teton country is indeed a land of inspiring beauty and many people from eastern cities spend the entire summer in the vicinity.

country at will. By a round about way they can ride to the backbone of the Teton Range and follow along its course between the peaks, from which superb views may be obtained. A more direct route is now being opened up by the Teton Forest, a trail up one of the most picturesque

of the many canyons that lead to the summit.

No more beautiful region for a summer outing can be found, and there are none more popular with those who have paid it a visit. Although it is only in very recent years that writers have placed the numerous attractions

of the locality before the public, the throngs of visitors are increasing greatly in numbers from year to year. They can increase a hundredfold and there will still be no crowding. The mighty sentinels overlooking this vacation land could announce room for as many more.

PRESIDENT HARDING PLANTS A MEMORIAL TREE



Photograph by International

PRESIDENT HARDING PLANTS A TREE IN CENTRAL PARK

The President is placing the first shovelful of earth around a tree planted in memory of the Americans who fell in the great war. At the left of the tree Mrs. Harding is standing.

**WHEN MEMORIAL TREES ARE PLANTED PLEASE INFORM THE AMERICAN
FORESTRY ASSOCIATION, WASHINGTON, D. C.**

President Approves Memorial Tree Planting

President Harding issued the following statement on May 6 in response to a request from Joseph M. Patterson, of the Chicago Tribune, which paper has taken up vigorously the American Forestry Association's memorial tree planting idea.

I find myself altogether responsive to your request for an appeal to the people to plant memorial trees along the important public highways as memorials to the men who were sacrificed in the World War, and, indeed, also to those who gave their service without the ultimate sacrifice. I can hardly think of a more fitting testimonial of our gratitude and affection than this. It would be not only the testimony of our sentiments, but a means to beautify the country which these heroes have so well served.

A general adoption of this plan would, in the coming years, be noted as one of the useful and beautiful ideas which our soldiers brought back from France. The splendid avenues of France have been among the great delights and attractions to travelers there, and a similar development would equally add to the beauty and attraction of our country. I am pleased to know that the idea has been already taken up quite extensively and that considerable progress has been made. If the co-operation of state, municipal and county administrations may be secured, as well as of the forestry services of the nation and the states, it ought to be possible to make a rapid advance in a comparatively short time. I hope that you and your coadjutors may be successful in securing a most substantial beginning in this direction during the present season.

Very truly yours,

WARREN G. HARDING.



Photograph by Harris and Ewing

MRS. HARDING PLANTING THE OHIO TREE

A tree presented by the State of Ohio to the American Forestry Association's home, on Sixteenth street, Washington, D. C., by Mrs. Warren G. Harding. A tree from each state is planted along a miniature roadway, where every passer-by can see it.

PRUNING

BY F. L. MULFORD

NOW that the time of year is at hand when much of the pruning of ornamental plants is timely, the ends to be achieved by it should be considered.

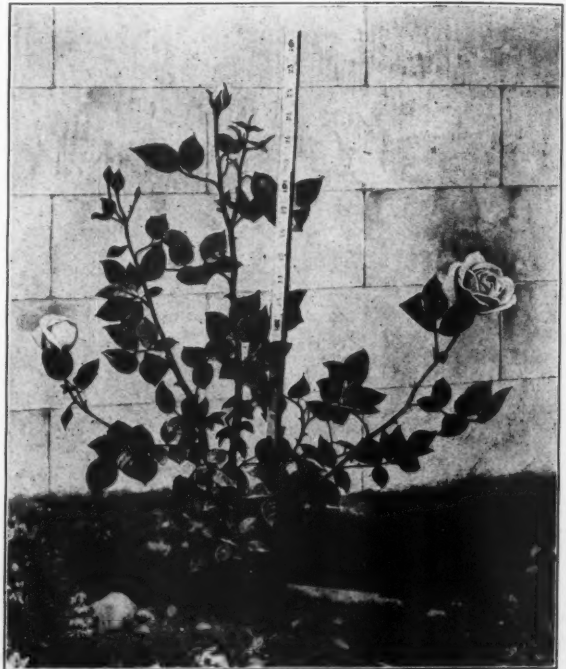
The purposes of pruning are to remove dead wood, to reduce the top in order to offset root mutilation, to control the form of the plant, to affect the quantity and quality of bloom, and to remove flowers. Because of lack of understanding of the purposes of pruning much of the work that passes under this name is mere plant cutting without any comprehension of the results that are likely to follow. For this reason the knife and pruning shears and especially the saw, should never be used on living plants without knowing the probable result.

Dead wood should be removed whenever it is discovered, as the sooner it is taken off the sooner the healing of the wound may begin. There is a partial exception to this, however, with plants that may seem to have been severely injured by winter killing or other unusual conditions, when ample time should be allowed to see how far the plant may be able to overcome the apparent injury before cutting is begun. This holds after transplanting also. How long it should be before pruning is done under these conditions is largely a matter of experience and no rules can be laid down for it, but six weeks or two months after the same kind of plants are well started is not too long to wait. New leaf buds are formed on most plants after others are killed, unless the vitality is too much reduced, but this requires different times for different plants, therefore no rule of procedure can be given. A

newly planted ginkgo tree has been known to stand a whole season without putting out a single leaf and yet the next year it started off and grew as its neighbors.

Transplanting of deciduous plants as it is usually done, results in root pruning and a complete removal of the roots from the soil. In replanting it is impossible to at

once re-establish as close a connection of the roots with the soil as existed before. For this combined reason it is usually desirable at the time of transplanting to remove enough of the top to reduce the number of leaf buds to correspond with the reduced efficiency of the root system. With some of the shade trees this may require the removal of a half or three-fourths of the leaf buds, but with many of the shrubs if carefully dug and handled it may not be necessary to remove hardly any of the top. With evergreen plants that are transplanted with a ball of earth, little root pruning occurs, and if well done no



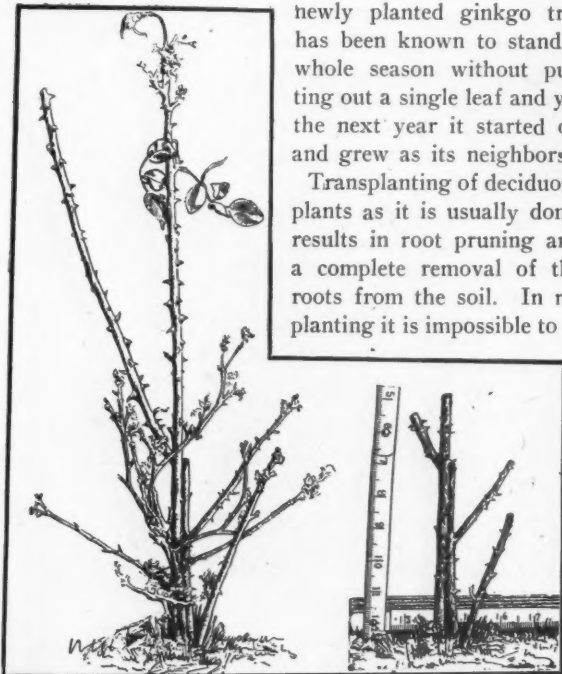
THE RESULT OF PRUNING FOR INDIVIDUAL BLOOMS

This is the same Radiance rose, two months later. Two beautiful blooms have been cut from the plant already, the remaining stubs, about one inch long, being hidden under the foliage.

loosening of the contact of the roots with the soil, therefore, no pruning of the tops is necessary. And, further, because of the character of the growth many evergreens would be ruined by pruning.

Judging by the way many trees and shrubs are pruned there is a widespread lack of understanding of the function of pruning as it relates to the form of plants. An understanding of this relationship is fundamental not only to pruning, but also to the use of plants in ornamental planting.

All landscape planting may be divided into formal and informal, which are, however, sometimes rather closely combined. In informal plantings, plants are encouraged to develop in as nearly their natural form as possible, while in formal plantings either formal plants are used or more informal ones may be sheared or trimmed into for-



BEFORE AND AFTER

This is a hybrid tea rose (Radiance) before pruning and the same bush after proper pruning for individual blooms. It would have been better to cut the left-hand shoot even shorter.

mal shapes. Sometimes a design or plan may be formal, while the planting may appropriately be informal, or as it is sometimes called, naturalistic. On the other hand, the use of formal plantings with an informal design gives most unsatisfactory results. The two most conspicuous errors of this sort are the placing of geometrical flower

beds in the middle of a lawn, especially on the home grounds, and the planting of many kinds of shrubs as individual specimens and shearing all of them to a similar oval outline. As already intimated it is appropriate to shear plants used in formal plantings to such form as is appropriate for the design as a whole, but in informal

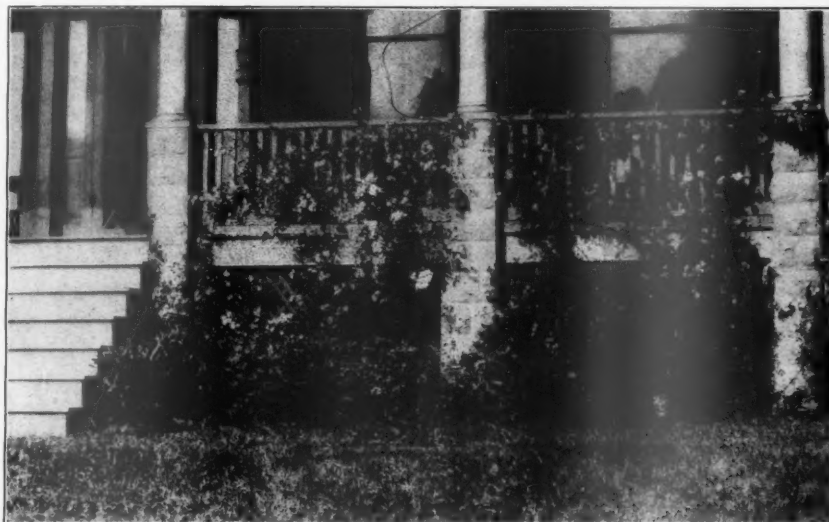
planting pruning should strive to preserve the natural character and expression of the plant. If any rule can be laid down to assist in achieving this result it would be to never clip off the end of a branch. If a portion of a limb needs removing it should be cut out entirely back to the next large branch. This applies to trees and shrubs alike. Some shrubs require a renewal of wood from time to time in order to have good young growth to produce flowers. This is secured by cutting out some of the old stems clear to the ground, but not by shortening back or "heading in" as it is often called. This may be done by cutting out a few each year, or a larger

number at less frequent intervals; but not over a third of most bushes should be cut away at any one time, unless it is found by gradually increasing the amount of wood removed from year to year that better results are obtained by more severe pruning.

Mistakes are often made in the placing of plants by using one that

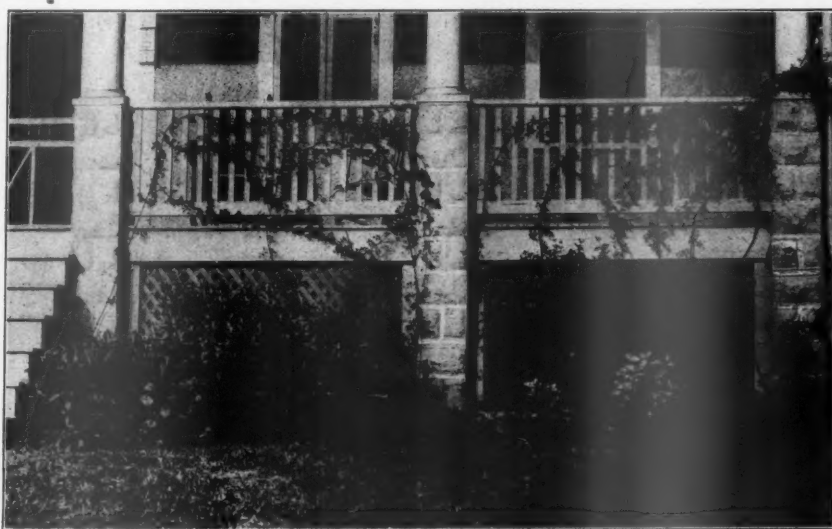
is too large for the location, or by having a spreading or drooping one where an upright one is demanded. The attempt is often made to correct such mistakes by ruthless pruning. The result is never satisfactory. Again clumps of shrubbery may encroach beyond the desired limits. Before attempting to rectify

such a condition by pruning it should first be determined whether or not a removal or a re-arrangement of part of the plants would not be desirable. A similar condition often holds with trees. Of course, with them transplanting is not as simple a matter as with shrubs, but thinning by removal of some of the trees can often be done to advantage. Where repression may be necessary it should be undertaken with its true purpose in mind, and not under the pretense of doing something for the good of the



AN OLD FAVORITE—THE DOROTHY PERKINS RAMBLER

This shows the flowering of this dainty and familiar rose in all its generous profusion of color and bloom. Pruning of this prolific plant should be done after the riotous blooming time is past



PROPERLY PRUNED AFTER FLOWERING TIME

And here are the same Dorothy Perkins roses, less than a month later, after all the flowering wood has been cut out clear to the ground, leaving only the current season's growth.

tree. Severe pruning is as unnecessary and unwarranted on a healthy tree as a major operation on a healthy man. If a tree is not thriving the cause

of the difficulty should be as carefully sought before resorting to pruning as is done with a sick man before an operation is suggested.

The practice of cutting off the ends of large limbs of trees so that the tree may put a lot of bushy sprouts and make a more compact mass of foliage is bad for the tree. With a silver maple it is the signing of its death warrant for an early date, and a Carolina poplar is not left in a much better condition. It is another case of attempting to change the outline and character of the plant by pruning and the results are always injurious to the tree. Occasionally, a tree that is in an unhealthy condition from root injury or restriction of the feeding area may be helped by severe trimming, but even under such con-



AN EXAMPLE OF POOR PRUNING

There are bad stubs in the top of this Norway maple where the ends of branches have been cut. Each of these cuts is liable to start decay that will run down through the tree and destroy it.

ditions it should be accomplished as far as possible without leaving stubs.

The evil effect of severe pruning is more apparent on evergreen trees than on deciduous trees, for with many of the coniferous evergreens the removal of the tips of the branches with the foliage means the death of the whole limb. When the growing ends are injured the older portions usually will not form new buds nor push out new growth.

The pruning of plants for formal effects either individual specimens or hedges should be frequently done so that it may be only necessary to remove the small new growths, thus avoiding the cutting of any large branches.

Deciduous plants should be trimmed while dormant and in addition two or three or more times during the growing season, while evergreens should be trimmed just before growth starts in the spring and again in midsummer.

With flowering plants comes the additional problem of so pruning as to produce the greatest mass of bloom or the best possible individual blooms. For either of these purposes the pruning should be done just after blossoming, so that there will be the longest possible time for the formation of flower buds for the next year. Thus, spring flowering plants should be pruned in May or June, instead of in March. This applies to wistaria, climbing roses, lilacs, spring flowering spireas, and the whole host of early flowering bushes that are now in bloom or have bloomed this spring. Cutting of the flowers is often a legitimate preliminary pruning, but the extent to which this may be indulged depends on the character and the rapidity of the growth of the plant. If flowers are cut from bushes it is well to go over them carefully just after the flowering season, and make sure that the cutting has been done so that the bush is left in good condition. If this has been ragged or has left stubs, new cuts should be made, taking off the bad ends back to good limbs.

Hybrid wichuraiana and hybrid multiflora roses, the types of climbing roses usually grown in the north, bloom only on shoots from wood of the previous season's growth. To encourage this growth it is desirable after blooming to cut out as much of the old wood as possible without destroying the present season's growth. In fact, roses on a fence or other low support that send up freely a large number of new shoots, may have all the previous season's wood removed immediately after flowering.

Those plants that bloom in late summer can be pruned any time before growth starts in the spring. With these the flower buds are formed on wood of the current season's growth, as rose of Sharon, hardy hydrangeas, crape myrtle and trumpet vines.

Where quality of bloom is desired there are many plants in which a modification of the foregoing suggestions will give much different results. For example, if in pruning hardy hydrangeas instead of cutting out a few branches and maintaining the natural form of the bush, the plant should be mutilated by cutting back each branch of the previous season's growth, leaving but one or two eyes at the base, the resulting flower heads would be very much larger. The vigor that otherwise would be spread among a large number of branches and flower heads would thus be concentrated on a few, resulting in the larger size of the few remaining heads. In the case of hydrangeas the flower heads come only on the end of each branch, so that the number of flower heads is limited by the number of buds left on last year's wood.

Bush roses, like hybrid perpetuals, hybrid teas, and teas, are another example. Where the bushes are left almost unpruned there are a large number of comparatively small flowers. When bushes two or three or more years old are cut within a foot or nine inches of the ground, the stems are longer and the flowers larger. Intermediate pruning gives intermediate results. Again, if

the roses on the severely trimmed plants are cut off with long stems so that there is not over an inch or a little more left on the bush next the old wood, new vigorous shoots will push out that will give better results later than as though only six inches of the top of the stem is cut off with the rose.

The best time to do needed pruning is when the knife is sharp. Pruning for the sake of pruning should never be done. Wounds heal fastest from cuts made in June and probably slowest from those made in August. Most

pruning is done in winter, because there is more time then that cannot be satisfactorily used in other ways. Some plants bleed badly if pruned just after the sap starts in the spring. If excessive this may be weakening, but apparently is seldom seriously injurious to the tree, though it certainly is distressing to the operator.

To summarize, pruning should be done with a definite, well-defined purpose in view. Most ornamental plants are less likely to be injured by no pruning than by being pruned with lack of definite understanding of the ends to be accomplished.

CHAMBER OF COMMERCE FORESTRY COMMITTEE

THE United States Chamber of Commerce has appointed an advisory committee on forestry with a view to submitting to its constituent bodies throughout the country a referendum of the conditions and needs of the country in forest matters.

In its endeavor to formulate a national forestry policy this National Forestry Policy Committee of the Chamber of Commerce of the United States will not confine itself to a study of principles embodied in forestry bills before Congress. This was decided upon at the first meeting of the Committee held on April 25, at Atlantic City.

Early discussion developed a question as to the scope of the Committee. Some of the members felt that the Committee should limit itself to an examination of the several forestry bills pending in Congress, while others took the position that the Committee's investigation should embrace the subject in the broadest possible manner.

Joseph H. Defrees, president of the National Chamber, was called upon to outline the powers of the Committee. He said that it was not the intention of the Board of Directors of the Chamber that the Committee should only go into the bills before Congress, but that it should endeavor to formulate general policies of its own after a thorough study of the whole forestry question. He said there were no limitations to its activities in investigating and reporting on a national forestry policy.

The Committee thereupon decided that it would make an exhaustive study of the subject in all its different phases. In this connection, the Committee adopted this resolution:

"Resolved, That there should be cooperation between federal government and the states as well as private timberland owners to forward a national forestry policy."

David L. Goodwillie, of Chicago, chairman of the Committee, appointed a number of subcommittees to deal with specific subjects under the general heading of forestry. These subcommittees are:

Charles S. Keith, chairman, and Harvey N. Shepard, to deal with Government Regulation, Private Holdings, Individual Denial of Public Right.

F. C. Knapp, chairman, and George L. Curtis, to deal with Fire Protection and Expenditures.

Hugh P. Baker, chairman, and Charles F. Quincy, to deal with Acquisition of Land and National Forest Survey.

Dr. Henry S. Drinker, chairman; F. C. Knapp and John Fletcher, to deal with Taxes and Taxation.

George L. Curtis, chairman; F. C. Knapp and Charles S. Keith, to deal with Utilization of Wood and Forest Conservation.

Hugh P. Baker and Harvey N. Shepard, to deal with Reforestation and National Forests.

The members of the Committee are:

David L. Goodwillie (chairman), box shook manufacturer, Chicago, Ill.

Charles S. Keith, President, Central Coal and Coke Co., Kansas City, Missouri.

F. C. Knapp, President, Peninsular Lumber Co., Portland, Oregon.

George L. Curtis, Curtis Companies, Inc., Clinton, Iowa.

John Fletcher, Vice-President, Fort Dearborn National Bank, Chicago, Illinois.

Charles F. Quincy, President, Q. & C. Company, and director American Forestry Association, New York, N. Y.

Dr. Henry S. Drinker, President, Pennsylvania Forestry Association, and director American Forestry Association, Montgomery County, Pennsylvania.

Dr. Hugh P. Baker, Secretary and Treasurer, American Paper and Pulp Association, New York City.

Harvey N. Shepard, Chairman, Massachusetts State Forestry Commission, Boston, Massachusetts.

W. DuB. Brookings (Secretary), Chamber of Commerce of United States, Washington, D. C.

It has been decided that the Committee will go to the Pacific Coast to study the problems of forestry on the ground. The bulk of the remaining virgin timber of the United States is in Oregon, Washington, and California, and it is felt that a personal investigation by the Committee should be made in consideration of the importance of the questions involved to the operators and timber owners of those states, as well as to the great lumber using communities of the rest of the country.

JUNE DAYS IN FIELD AND FOREST

BY R. W. SHUFELDT

(PHOTOGRAPHS BY THE AUTHOR)

THERE is no month in all the year that holds out greater inducements for one to lay aside everything and get out into the open than does the month of June.



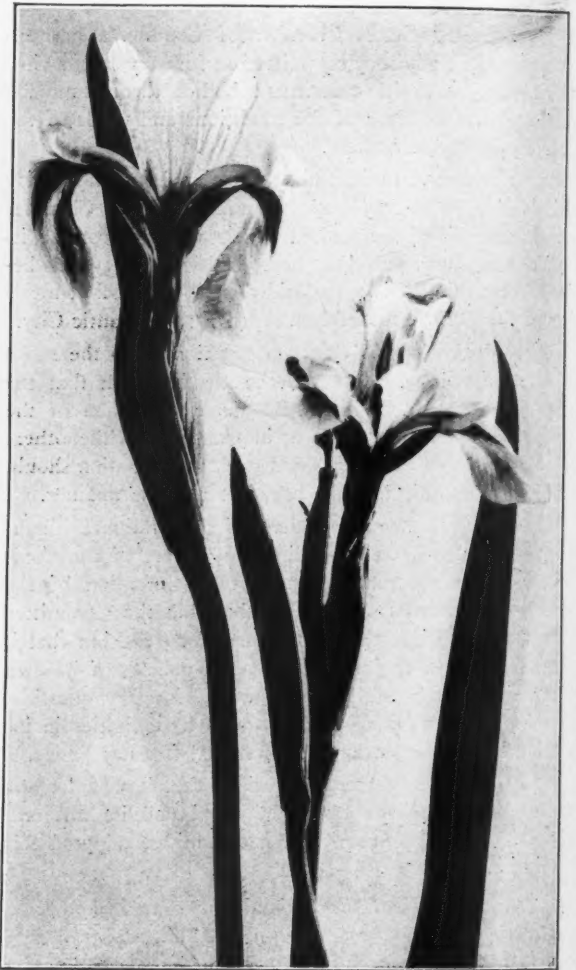
RED AND GREEN FRUIT OF JUNE BERRY

Fig. 1—There are several species of the June berry in this country, and they are all small trees or shrubs. As a genus they fall in the Rose family, and their leaves are simple and arranged in racemes.

This is true for every inch of the country, from Maine to Mexico, from the Atlantic coast to that of the Pacific—June is the month for everything that renders the world of nature so charming and so enticing. Hundreds of flowers are then in bloom; the beauty of woods and forests and isolated trees is then at its height; while animal life of all kinds, land forms as well as aquatic ones, is

in stages most interesting for study and observation, and in most regions, especially throughout the more northern sections, one has all one may desire by way of early summer days, with azure skies, gentle showers, and exhilarating climatic conditions.

Throughout the northeastern Atlantic States, from Pennsylvania southward, the flowers of the Shadblow



SLENDER BLUE FLAG

Fig. 2—Various Irises or Flags occur in our flora; this is *Iris prismatica* of the Iris family; the upper flower shows very well the origin of the Fleur-de-lis. June is the month for them; and when growing in masses, they are strikingly beautiful and impressive.

have already dropped their white petals; while well down toward Virginia this favorite shrub has already passed to the fruiting stage, and those familiar with it call its

lovely red and purplish berries the June berries (Fig. 1). As these have an agreeable and rather sweetish taste, many people like to eat them, though they are rarely exposed for sale in the fruit markets. Some call them Service berries. While it is usually found growing in dry, open woodlands, it is also to be found along the banks of sluggish streams or on the borders of marshes.

Alice Lounsberry states that this shrub may grow to become a tree sixty feet high; but we must believe that it rarely reaches a height to exceed thirty feet. As a matter of fact, in barren soil, more or less rocky, one may find June berries in full fruit that have hardly attained the height of six or seven feet. Its leaves are well shown in Figure 1, where, too, a fine bunch of its fruit is displayed.

One may well ask why this famous shrub has received names so utterly different in their meaning — a question which Mrs. Dana has answered in the following words: "The shadbush has been thus named because of its flowering

at the season when the shad 'run'; June-berry because the shrub's crimson fruit surprises us by gleaming from the copses at the very beginning of summer; service-berry, because of the use made by the Indians of this fruit, which they gathered in quantities, and, after much crushing and pounding, made into a sort of cake." A likely place to find a June-berry shrub in full fruit is along the

margin of some such pond as we see in Figure 3; but should we not meet with one, there are many other interesting things that we will surely find.

At a little distance we see, growing amidst the sedge that borders the banks in some places, what appears to be a patch of beautiful purplish flowers; some are growing out in the water, away from other plants. As we come

nearer, they are readily recognized as the Blue Flag in full bloom, or, as they are called, Blue Iris, the plant here figured being the Slender Blue Flag. In our flora it has several close relatives in its own genus, such as the Larger Blue Flag; the Dwarf Iris; the Yellow Iris, and others, the entire group being related to the Iris family, the *Iridaceae*. All have sword shaped leaves and tough, tuberous rootstocks, and in all the flowers are wonderfully handsome and very showy. Many species have now been cultivated and grow in our gardens. Iris is Greek for the rainbow; the goddess of the same name was the attend-



A TYPICAL FROG POND

Fig. 3—This beautiful pond is in Southern Maryland, a mile or so below Great Falls. In it live many interesting aquatic forms, including two or three species of frogs. Patches of elegant yellow pond lilies may be seen upon its surface; while where the margins are sedgy lurk pretty specimens of the little ribbon snake and other creatures.

ant of Juno, and the history of the flowers of this famous plant is very interesting. It was Ruskin who said that "the fleur-de-lys, which is the flower of chivalry, has a sword for its leaf and a lily for its heart"; and, as a flower, it runs into the history of France, of Napoleon, of the Crusader, of Louis the Seventh—and into no end of works in literature and the fine arts.

Several species of frogs breed in our ponds; and in this month of June not only may we see them jumping into the water as we walk along their margins, but we may note, too, their various kinds of tadpoles, seen swimming about just below the surface. Great, big fellows, some of them, being the tadpoles of the bullfrog, and by no means easy to capture, even with a good dip-net. Speaking of frogs, it was only last June—perhaps a little earlier—that the writer captured a most interesting specimen of a frog which he had never before seen alive so far north. It was living in a deep wagon-rut filled with rain water, in a piece of woods running along the Potomac on the Virginia side, a mile or so west of Mount Vernon. It proved to be a fine specimen of the Southern Bullfrog (Fig. 4), and doubtless a male, as its ear-drum was much larger than its eye, and its eyes were placed unusually close together. Superiorly, its head and shoulders were of an

elegant green, most vivid in tint, and this gradually shaded into a bronzy or olive color behind. Its nostrils were more prominent than we find them in the common bullfrog, and its face was longer and more pointed. The



WILD BLACKBERRY IN FRUIT

Fig. 5—The shrubby plants of this group all belong in the Rose family. When young, the fruit is red—hence its name *ruber* (Roman). We have more than forty species of them in the flora of the United States, and they range from coast to coast. When in blossom in New England, they look like this in Georgia.



THE SOUTHERN BULLFROG

Fig. 4—This species was first found at Bay St. Louis, Mississippi, and has been taken in Florida. The specimen here shown was captured by the writer in Virginia, just west of Mt. Vernon. It was in the water of a deep wagon rut in the woods, and was apparently a male.

groove down the middle of its back is well seen in the reproduction of the excellent photograph the writer obtained of the living specimen. It was at Bay St. Louis, Mississippi, that this species was first discovered, and it has also been captured in various places in Florida; but the writer is not aware that it has been taken so far north heretofore. As compared with our common bullfrog, it is an entirely different looking species; it outclasses the latter entirely in coloring, and may readily be recognized by other characters which it presents. Specimens of this frog were frequently taken by the writer in the bayous and ponds south of New Orleans, Louisiana, nearly forty years ago, and these were examined along with other batrachians, by the late Prof. E. D. Cope.

Well down the coast in June, everything in nature is much further advanced than is the case northward. In the Carolinas, the field blackberries may be in full fruit, and there is no more beautiful sight than masses of bushes of them when such is the case (Fig. 5).

Those who were out much in the open during the summer of 1920, in the northeast Atlantic Coast States, will remember what a peculiar year it was with respect to the presence of insects, birds and flowering plants. Insects of every description were remarkably scarce, some butterflies and moths not being observed at all. To be sure,

a couple of Luna moths were secured by the writer (Fig. 6); but aside from one specimen of a silk-worm moth (*Telea*), no other large moths were seen. Indeed, this extreme scarcity of insects and birds in 1920 was observed by the entomologists and ornithologists of the United States National Museum, and in various cities the local papers commented upon the fact.

As to the plants, many species did not bear flowers at all during that summer, or if they did they were so rare as not to be noticed by any one; upon the other hand, some plants flowered luxuriously. This was markedly the case in some of the common flowers, such as the horse nettle, a plant which, at the time mentioned, was to be seen growing in great abundance everywhere—even along the sidewalks in the city of Washington. Not only this, but the plant and its flowers was especially fine in all respects during that summer (Fig. 7). Considerable difficulty attends the photography of this plant, as it begins to wilt almost as soon as it is gathered; the best way to get a good picture of it is to dig up the entire plant, and carry it home in a shaded basket. Other plants are in the same case with respect to wilting, such as the Jewel-weed, the Dandelion, and the Wild Geranium or Crane's bill.

During this phenomenal summer of 1920, it was no uncommon thing to observe in wet places, in the neighborhood of Washington, great masses of Jewel-weed—both the red and the yellow—with hardly any flowers upon the plants; while in the same locality the Virginia Day-flower might be flourishing most luxuriously, bearing its blue flowers by the hundreds.

Such facts as these are probably far beyond our ken and may never be explained. The above conditions obtained in trees, too; for while such trees as the locusts (Fig. 8) blossomed most profusely, the poplars had scarcely any flowers. It was truly a wonderful sight to see the locust trees in some parts of the East; and so abundant and fragrant were their great bunches of flowers that the air was filled with their perfume for miles about.

Yellow or Black Locusts, with various other trees related to them, form the family *Leguminosæ* or Pod-bearers—an enormous group, with representatives all over the world; most of them are of vast economic importance, and no fewer than seven or more thousand species have been described. They have been called "pod-bearers" for the reason that they all bear simple, two-valved pods containing the seeds when their flowering stage is over. This being the case, it is clear that such plants as the clovers, all the peas and beans, lentils, and so forth, are arrayed in this group—in fact, any plant, in

any part of the world, with a seeded pod like a honey locust or a bean, belongs in this family, the *legumes*. Some yield fine foodstuffs, while many of the trees produce timber of the best quality. Some furnish us with dyes, rubber, oils, balsams, and so on; and not a few of our finest garden flowers are members of the pod-bearing family, as the sweet pea and a long list of others.

Insofar as the pod-bearing trees go, they are all of especial interest to foresters, as we not only have the various species of Locusts, but such fine trees as the Red-bud or Judas tree, and the Texan variety of it (*Cercis texensis*), which latter is a shrub rather than a tree. Then there is the Kentucky Coffee tree; the Yellow-wood or *Virgilia*; the Texan ebony, and others.

Many of the American leguminous trees are thorny—even the Honey locust is known in many places as the Three-thorned

Acacia; and the wood of the latter is widely used for fuel and for fencing on farms where the tree is abundant. Wheel hubs are turned from this wood, and in some sections it is a great favorite as an ornamental shade tree; while it makes an excellent hedge when kept trimmed well down. Its flowers are small and inconspicuous. In nature it occurs most frequently in rich woods and river bottoms; and where one tree grows, we are likely to find quite a number of them.

An altogether different tree is the Locust, also called the Yellow or Black Locust, which may grow to be



THE LUNA MOTH

Fig. 6—We know of no more beautiful North American moth than the common Luna, it being of a bright, though pale, pea green, with the fore-wings emarginated in front with brown. This one was captured by the writer at Glen Echo, Southern Maryland, and is here seen resting on the bark of a big sycamore. It is just out of its cocoon.

seventy or eighty feet in height. In form it is usually slender, and its erect branches turn at the summit to form an oblong head. Rough, and of a dingy gray color, its bark exhibits many longitudinal deep furrows, and in these many insects may hide. On the other hand, its twigs are quite smooth, rather downy, and of a liver-brown color when wet. Its heavy, coarse-grained wood is of an ochre color, hard, heavy and wonderfully durable; even when used as fence posts for years in wet soil, it withstands the treatment and remains sound. Hence it is much used in ship construction, and in the manufacture of many parts of wagons and automobiles. A tonic of some value is made from its bark; and where the tree is abundant, many are cut down for fuel. Locust trees have spread pretty thoroughly over nearly all parts of the United States, and in a great many localities they are planted for ornamental purposes.

In the middle section of the country, the Locust trees bloom in early June, the drooping racemes being axillary, and the white, pea-like blossoms extremely fragrant; some of the clusters are at least seven or eight inches in length.

As to the leaves of the Locust, they are so well shown in Figure 9 that, as Doctor Holland says about his moth and butterfly plates, "they need no verbal description." The pods, each containing from four to ten seeds, often hang on the trees all winter, irrespective of climate; they are of a deep brown color, and very smooth and silky. Early in the autumn the leaves of the Locust turn a bright yellow, and the trees are then very beautiful to behold. Unfortunately, Locust limbs and twigs are exceedingly brittle; so that, when the trees are much exposed to high winds, they snap off, and the symmetry of the tree's outline soon becomes unpleasant and scraggly. Old wind-driven Locusts are familiar objects in numerous places, where they have caught the full force of many storms. But when a big Locust tree is in full flower, its beauty and fragrance is hard to beat; and it is most delightful to note the good time thousands of honey bees are having, as they revel in the sweets of its generous blossoms. This is its hey-day; but one would not take it for the same tree to see it in

winter, with its scraggly limbs and twigs, and to listen to the rustling of its hundred and one dry and rattle-like pods. When evening comes, the leaves of the Locust partly close up, much after the fashion of a sensitive shrub, and this is likewise the case during rainy weather. Julia Rogers tells us that the cultivation of locusts had been introduced in Europe by Vespasian Robin some years prior to 1640, and that Linnæus, for this reason, named the genus *Robinia*. "Great plans were made a century ago for the growing of these trees to supply the British Navy with shipbuilding timbers," says Miss Rogers. "The plan never reached the magnitude its promoters desired; yet the locust is to be met with more often in European gardens and forests than any other American tree."

Insects pests do not seem to injure the locusts to any appreciable extent in Europe; while, upon the other hand, the locust borer in our country has, in some sections, actually ruined the entire output of these valuable trees, thus rendering its cultivation useless. When this borer is absent, the tree reaches a very high point in the scale of economic importance in the lumber market, and it becomes quite profitable to grow them extensively for that purpose.

This locust borer is a very pretty beetle nearly an inch in length. It has knobby antennæ and red legs, and the body is black, with transverse, wavy yellow lines, some five or six in number. Early in the autumn this beetle may be collected on the flowers of the goldenrod, and several of them make desirable



THE COMMON HORSE NETTLE

Fig. 7—Horse nettles, of which there are several species, belong in the Nightshade family; it is found growing in waste places and in sandy soils. The flowers are pale violet, rarely pure white.

additions to the cabinet of the young entomologist.

Most people are under the impression that the Locust is a thorny tree; but such is by no means the case, as what are supposed to be thorns are merely prickles, like the ones found on gooseberry and rose bushes. If one will examine a perfect locust leaf, a pair of these little prickly stipules will be found at its base, and when the leaf falls in the autumn, these remain with it. Sometimes they grow to be of some size, and cause the handling of locust branches to be a by no means pleasant task.

This locust tree is not a very suitable one for lawn-planting for the reason that it sends up many suckers

from its roots; then, too, it leafs out late and sheds early in the autumn. Its other disadvantages have already been referred to—its distorted appearance when leafless, and that it is pretty sure soon to be killed by the locust borers. Notwithstanding this unfavorable record, thousands of people in this country are dead in love with our American locust trees, and it is not at all likely that this love will grow one whit less with the generations to come. Among the pod-bearers, the Locust has many relatives in this country, such as the Redbud, the Texas Redbud, the Texan Honeylocust, and the Kentucky Coffee tree.

This last is one of the most remarkable of our American forest trees. In the first place, it may grow to be fully one hundred feet in height; and, although it is to be found over a good part of Eastern United States, it is one of the very rarest of our forest trees. It possesses a very durable light brown wood, which, when obtainable, is chiefly used for fencing purposes. In some cities we may find it used as a shade tree in the

streets, while in nature it grows best in moist, rich soils. Its inconspicuous flowers are, according to Julia Rogers, either "greenish white" or "greenish purple"; and she

says that the tree "is remarkable for its dead-looking frame, which holds aloft its stiff, bare twigs in spring after other trees are clothed with new leaves. But at length the buds open and the leaves appear, twice compound, and often three feet long. The basal leaflets are bronze green, while the tips are still pink from having just unfolded. This stately tree, its trunk topped with a close pyramid of these wonderful leaves, is a sight to remember. Often the trunk is free from limbs for fifty feet or more." We find much to observe during the

month of June in almost any part of the United States; but it varies both in kind and amount according to the part of the country we may be in. In Maine one would find what would never be seen in Florida during June. North of Virginia, nearly all the birds have finished breeding, with the exception, perhaps, of the cedar birds—a species that usually nests long after others are through. So the principal attractions in the open for the student of nature at this season of the year are the trees, the plants and the insects

and spiders, to which must be added all aquatic forms, and of which there are many kinds, all the way from an amoeba to not a few mammals.



COMMON LOCUST TREES IN FULL FLOWER

Fig. 8—Every one loves this tree and the rich fragrance of its hundreds of showy flowers. The pair seen here grow on the sandy point at Miller, a mile or so west of Mount Vernon, the famous home of Washington, in Virginia.

Every tree lover should receive the beautifully illustrated monthly magazine American Forestry. Write to the office 1214 Sixteenth St., Washington, D. C. for a sample copy.

HEW TO THE LINE, AS B. L. T. SAID, AND

EVIDENCE of the wide-spread popularity of the American Forestry Association's educational campaigns is seen in the way newspaper paragraphers have taken up various phases of the work. The cartoonists, too, see many opportunities in keeping the importance of forestry before the readers. The test of a subject is the way the paragraphers take it up or let it alone. They have taken it up, so, as the late B. L. T., of the Chicago Tribune, said for so many years at the head of his column, "hew to the line, let the chips fall where they may."

SPEAKING OF OUR WASTEFUL LAND TENANTRY SYSTEM



Darling, in the Washington Herald.

Hagerstown Mail: The American Forestry Association is carrying on a popular vote to name a national tree. No man who remembers his boyhood will vote for either the hickory or birch.

Minneapolis Journal: The American Forestry Association is asking what is the national tree. If Mr. Burbank could cross the oak and the pine, the question might be answered.

Indianapolis Star: A forestry bill is expected at the next session of congress and by the time all the undesirables get over here we may have an immigration law.

Nashville Banner: The Associated Press carried a dispatch from Washington to the effect that American forests are so rich with infinite variety that President Wilson was unable to name a choice for a national tree. He wrote to the American Forestry Association, which is compiling a national

referendum as to what tree best represents America. A correspondent of the Banner came to the President's relief by suggesting the cactus tree, which thrives in arid lands.

Albany (Ala.) Daily: The American Forestry Association, of Washington, has sprung a new idea in elections upon an unsuspecting public. Some half a dozen well-known trees are candidates before the American people for position as our National Tree. The campaign is distinctive in American campaigns, but one of the chief features is the fact that the "candidates" are dumb. They cannot inflict campaign oratory on the public. There is a great deal of consolation in that!

Detroit Free Press: The search for a national tree which is now being carried on by the American Forestry Association will remind old-timers that the Democrats used to accord that distinction to the hickory whenever they won an election.

Montgomery Advertiser: To forestall our gloomy uplifters who may be committed to the weeping willow, we suggest the magnolia—ever green and as enduring as the rock of ages.

Cincinnati Enquirer: Without deprecating the claims of the cited authority's choice, or the claims of any other of the numerous candidates for this high national honor, it is here suggested that not one of them has a chance, not the barest look in. It national tree long has been selected. It never can be displaced by any other tree in this democracy—not so long as Congresses and Legislatures, political parties and politicians exist to water its roots, encourage its growth and to preserve its existence to the end that it may bear abundant fruit. Yea, the persimmon tree is the national tree; and the longest pole still is essential to securing of its choicest fruitage.

Billings (Mont.) Gazette: Down south the persimmon is running strong as the national tree in the plebiscite being taken by the American Forestry Association. That's because of the popularity of the persimmon tree in the south, and it may be that it grows over a wide enough area of this country to swing sufficient votes. Up in this country, and particularly around Billings, we're handicapped in the election. We might put forth as our candidate the cottonwood tree, but with little chance that it would be named. Around-shedding time, we doubt if it would even swing a majority of votes in its home precincts.

Everybody has been asked to vote a choice for the national tree—schools, or-

ganizations of all kinds, civic bodies and individuals. The press is variously expressing its selection. Strong candidates are oak, walnut, elm, maple, white pine, cedar, sycamore, Douglas fir.

The plebiscite is a good thing. Anything is a good thing that arouses an interest in trees. No city can have too many of them, nor a variety too wide. Billings is well shaded, but, as the city grows its tree-population should grow with it. Trees planted now as spindling saplings, requiring the watchful care of new infants, some day will become the verdant growths that beautify the thoroughfares and bring refreshing rest to those that pass or pause beneath them.

The *Boston Transcript* took up the subject of maple sugar and would lead the world to believe that only in New England can the blown-in-the-bottle, honest-to-goodness maple sugar be produced. To quote the *Boston Transcript*: New England people have great respect for the American Forestry Association, which is doing an excellent work all around; but they will nevertheless take the association's latest piece of "publicity" with several grains of the salt of incredulity. The Forestry Association has been instructing the country on the subject of making maple sugar. It seems to imagine that a national view can be taken of this subject, which is not the case—true maple sugar being distinctly a New England and a Canadian industry. It is true, as the American Forestry bulletin states, that the sugar maple grows elsewhere than in New England and Canada. It is also true that the sap of the *Acer Saccharinum* is sweet, or in some degree

BEFORE IT IS TOO LATE



Orr, in the Chicago Tribune.

LET THE CHIPS FALL WHERE THEY MAY

sweet, wherever the tree grows. But the sap of the birch, and that of the sugar pine of the far Northwest, also yields sugar. It takes more than a sugar maple tree to make maple sugar. The tobacco plant, under cultivation, will grow anywhere, but only the Vuelta Abajo produces the true Havana leaf.

Vermont is the home and center of real maple sugar, but the article is produced in excellent quality throughout northern New England and portions of Canada. The maple sugar of northern Michigan, of Minnesota, of the North Carolina and Tennessee mountains, is not readily recognizable as "maple" by the cultivated New England palate. For one thing, the sap there is below quality, owing to the nature and ingredients of the soil in those remote regions. And in the second place, proper methods of manufacture and of refining are generally unknown there. The Chippewa Indian of Michigan, Wisconsin and Minnesota boils maple sap in a camp kettle and strains the product through his blanket; but should we call that "maple syrup"? Assuredly not. It takes the hillsides of New England, and the inherited and developed skill of the New England sugar maker to produce the genuine article.

The American Forestry Association is simply raising false hopes in distributing broadcast, in regions far removed from the sweet influences of the limestone and granite ridges of New England, the maritime provinces and Quebec, its bulletin of information on the subject of maple sugar production. What has never been there,

namely, a really good article of locally produced maple sugar or syrup, will never be. It is possible, however, that the vain attempt induced by the Association's bulletin will be of eventual benefit, by cultivating in distant regions the desire and the taste for a delicious article of which New England must ever retain a monopoly.

Now comes a voice from the central west raised in protest at the claims of the *Transcript*. Again we quote:

St. Paul Dispatch: New England is a queer blending of the erudite and the recondite. The *Boston Transcript* is much disturbed because the American Forestry Association has had the temerity to intimate that maple sugar is produced beyond the confines of the cultured and fortunate, though somewhat limited, district over which it presides with conceded grace and distinctness. It resents the possibility, even remote, of the real article of *Acer Saccharinum* growing outside of New England and adjacent regions in Canada and protests especially against distinguishing as "maple syrup" the product of "the Chippewa Indians of Minnesota, Wisconsin and Michigan," referring loftily to this favored section as remote and necessarily barbarous.

It is not surprising that Boston visualizes Minnesota as part of the Wild West, with village fortified against surprises by marauding Indians, and the lives of farmers divided between forays against ravaging wolves and periodical hunts of buffaloes roaming in countless hordes over the prairies. The extent to which the *Transcript* is plunged into deepest darkness in this respect may be deduced from its disgusted assertion that the maple syrup of Minnesota is produced by the Chippewa Indian, "who boils maple sap in a camp kettle and strains it through his blanket."

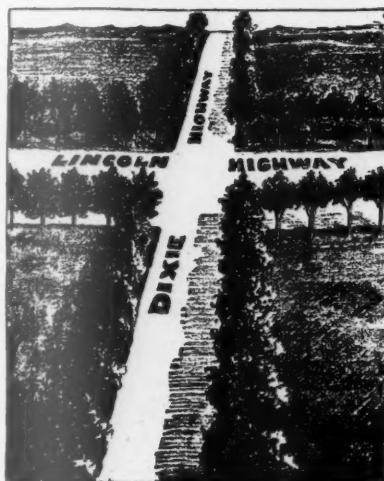
The maple tree of the approved New England variety may be rare in Minnesota, but not half so rare as the Chippewa Indian in this industrial activity—or any other activity. The spectacle of a noble red man boiling sugar is a novelty which Minnesota would yearn to see. Exhibitions of pioneer days in which the aborigines figured have been occasional features of the State Fair, but to stage such a performance as our cultured Boston contemporary imagines a part of daily spring life in Minnesota would startle State Fair visitors as a piece of melodrama worked out of overwrought imagination.

Thus while Boston and St. Paul battle for the maple sugar spotlight the readers' thought is turned to trees. Next month other phases of this great subject will be taken up by the editors.

The educational value of these things is well expressed by the Chicago Tribune, which has taken up the campaign for Roads of Remembrance. The Tribune says:

Chicago Tribune: The memorial tree planting which will be dedicated to every service man in the war, and which will be of great benefit in the reforestation of the country, has the approval of virtually every citizen and association of citizens. Their

A LIVING MEMORIAL ACROSS AMERICA



McCutcheon, in the Chicago Tribune.

"In honor of each and every United States soldier and sailor in the world war a tree along the great American highways, every tree to bear the name of a man who served."

expressions approve the sentiment and the utility, and it is fairly certain that the movement is on the way towards the organization which can operate, get the trees, plant them, and inscribe them one to each individual soldier and sailor in the service of the United States.

The project interests nearly a third of the country, directly and intimately, appealing to affection for some man who served, and the sentiment itself will interest all the country, whether a family name is carried by a tree or not. The intelligence of the country will approve as much as its sentiment does.

Americans have been cutting trees without much thought of the future. They know they have torrential rains, which not only cause floods, but which wash the soil into the streams and carry it off, impoverishing the land. They know that China now starves because the land long ago lost its trees and its soil. They know that China and the United States have a great deal in common in the character of their rains and of their action, unchecked, upon the soil.

Americans can retain the productivity of their land by restoring trees where they are needed. Such a project as reforestation ordinarily proceeds slowly against inertia. If it is injected with a living sentiment and turned to the purposes of a great national memorial peculiarly appealing to the people, it should go ahead with speed and effectiveness.

Just Plant a Tree

Woman's World.—Immediately following the armistice the American Forestry Association proposed the idea of planting a tree for each soldier in a community who lost his life in the war. Schools, colleges, churches and patriotic organizations have planted trees and established "Roads of Remembrance."

For the small town and the rural school there is no finer memorial than tree planting. It has a special significance, symbolizing growth, strength, and enduring beauty from the very soil from which comes their life. These trees are living, growing testimonies, not along to those who died, but a strengthening evidence that those who are left behind are not unmindful of the sacrifice, nor negligent in love of country.

As a soldier might express it: When I die, please plant for me a tree, to keep alive the memory of other boys and men like me, who fought no glory, asked no fame, except to die in Freedom's name. Please do that little thing for me, when I am gone—just plant a tree.

ACTIVITIES OF THE AMERICAN FORESTRY ASSOCIATION FOR MAY, 1921

The Association's campaign for the passage of the Snell Bill was carried along vigorously during the month by the publication in several thousand newspapers of articles showing the necessity for a forest program, for the perpetuation of our existing forests and the planting of our many millions of acres of waste land. A number of organizations endorsed the movement and will aid in securing the passage of the bill.

* * *

The Association was represented at the annual convention of the Chamber of Commerce of the United States at Atlantic City by Directors Charles F. Quincy and Dr. Henry S. Drinker, who are members of the Forestry Committee of the Chamber, and by Secretary P. S. Ridsdale. The action of the Forestry Committee is described on another page of this issue.

* * * * *

In aiding to make successful Forest Protection Week, May 22-28, proclaimed by President Harding, the Association prepared and distributed to the newspapers of the country a number of articles emphasizing the necessity of forest protection and also organized in Washington, D. C., a demonstration of properly fighting a forest fire.

* * * * *

Bulletins on how to teach their pupils a knowledge of trees and their uses were distributed to thousands of school teachers to the extent that they will be able to know their values and also in their states to prepare demonstration charts. This work is spreading rapidly throughout the United States and it is expected that the study of forests and trees before long will be taken up in every public school.

* * * * *

Mrs. Warren G. Harding planted in front of the Association's building a tree presented to the Association by Ohio and the small spade which the President's wife used in this planting will be loaned to organizations throughout the United States for the purpose of planting memorial trees. Mrs. Medill McCormick, of Chicago, at the same time planted a tree presented by Illinois.

* * * * *

The Association was informed by The Chicago Tribune that it had taken up the campaign for the planting of memorial trees, and also the planting of trees along the highways of the United States, and that it will make a vigorous campaign for this purpose.

* * * * *

The General Federation of Women's Clubs was provided, through Miss Julia A. Thorns, the chairman of the Forestry Committee, with material for the study of trees and for taking in every state a vote for a national tree after the value of each tree had been carefully studied. Each club belonging to the General Federation will take up this activity.

* * * * *

The Literary Digest during the month published two full pages from AMERICAN FORESTRY magazine, one on the manufacture and use of shingles and the other on methods of reclaiming denuded and eroded lands by forest plantings.

* * * * *

The Association received the ballots cast by the school children of Dayton, Ohio, and Springfield, Ohio, in the national tree voting contest, which ballots were made after a careful study by the sixty thousand school children of these cities of various trees and their values.

* * * * *

The Association urged Governor Stephens, of California, to sign the bill which has just been passed by the California State Legislature appropriating \$15,000 for continuing the work on the John Muir trail, and the bill appropriating \$300,000 for the purchase of redwood timber along the state highway in Humboldt County.

* * * * *

The Association urged and heartily endorsed the movement to preserve for the State of Wisconsin the region known as "Northern Lakes Park," which is in great danger of being destroyed by loggers.

TWO FORESTRY BILLS

Two bills for a national forest policy have been presented to Congress. One is the Snell bill, which is endorsed by the United States Forest Service, the American Forestry Association, the National Forestry Program Committee and others; the other bill is the one introduced by Senator Capper.

Both these bills are here published in full for the examination of our readers:

THE SNELL BILL

The Snell bill was introduced on April 11, and was referred to the Committee on Agriculture:

A Bill to provide through cooperation between the Federal Government, the States, and owners of timberlands for adequate protection against forest fires, for reforestation of denuded lands, for obtaining essential information in regard to timber and timberlands, for extension of the national forests, and for other purposes, all essential to continuous forest production on lands entirely suitable therefor.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of Agriculture, through the Forest Service, is hereby authorized and directed, in cooperation with appropriate officials of the various States or other suitable agencies, to recommend for each forest region of the United States the essential requirements in protecting timbered and cutover lands from fire, in reforesting denuded lands, and where and to the extent necessary, in cutting and removing of timber crops by such methods as will promote continuous production of timber on lands chiefly suitable therefor; and the Secretary of Agriculture is further authorized, on such conditions as he may determine to be fair and reasonable in each State, to cooperate with the various States and through them with private and other agencies within the States in bringing into effect such essential requirements favorable for forest protection and renewal with a view to furnish a continuous supply of timber for the use and necessities of the people of the United States. There is hereby authorized to be appropriated annually, out of any money in the Treasury not otherwise appropriated, \$1,000,000, to enable the Secretary of Agriculture to carry out the provisions of sections 1 and 2 of this Act.

SEC. 2. That in no case other than for preliminary investigations shall the amount expended by the Federal Government in any State during any fiscal year under the foregoing section exceed the amount expended by the State for the same purposes during the same fiscal year, including the expenditures of forest owners required by State law, and the Secretary of Agriculture is authorized to withhold cooperation, in whole or in part, from States which do not comply in legislation or in administrative practice with such requirements as shall be established in accordance with section 1 of this Act. In the cooperation extended to the several States due consideration shall be given to the protection of the watersheds of navigable streams, but such cooperation may, in the discretion of the Secretary of Agriculture, be extended to any forest lands within the cooperating States.

SEC. 3. That the Secretary of Agriculture, through the Forest Service and in cooperation with the various States, organizations of timber users, owners of timberlands, and other agencies, is hereby authorized and directed to make a survey of the forest resources of the United States to determine the quantity, location, availability, and suitability for various uses of each class or species of timber; to determine the approximate area, location, condition, and productive capacity of the land chiefly valuable for timber growth and not required for other purposes; to ascertain the yearly requirements as to kinds and quantities of timber of each State and important wood-using industry; and to obtain such related information as in the judgment of the Secretary of Agriculture may be necessary to carry out the provisions of this Act. There is hereby authorized to be appropriated out of any money in the Treasury not otherwise appropriated, \$3,000,000, to be made available at such times and in such amounts as may be required and recommended by the Secretary of Agriculture for carrying out the purposes of this section.

SEC. 4. That there is hereby authorized to be appropriated annually, out of any money in the Treasury not otherwise appropriated, the sum of \$1,000,000 to enable the Secretary of Agriculture to conduct experiments and investigations in reforestation and methods of cutting and utilizing timber, to establish forest experiment stations, and to conduct experiments, investigations, and tests in the chemical, physical, and mechanical properties and utilization of native and foreign woods and other forest products, including timber tests, wood preservation, tests of wood and other fibrous materials for pulp and paper-making, and commercial demonstrations of improved materials, methods and processes, and such other tests and investigations as in the judgment of the Secretary of Agriculture shall be desirable to promote the most effective use of forest products in the United States. The investigations, experiments, tests, and demonstrations provided for by this section may be conducted independently, or in cooperation with other branches of the Federal Government, with State, county, and municipal agencies, educational institutions, business organizations, and individuals; and authority is hereby granted the Secretary of Agriculture to receive money contributions, under such conditions as he may impose, from cooperators, whose contributions shall be covered into the Treasury and shall constitute a special fund, which is hereby appropriated and made available until expended, for the payment of the contributor's share of the expenses of conducting any such investigation, experiment, or test, and for refunding to contributors amounts contributed by them in excess of their share of said expenses: *Provided*, That the Secretary of Agriculture shall expend such portions of the appropriations authorized by this section as he deems necessary to study the effects of tax methods and practices upon forest perpetuation, to devise tax laws designed to encourage the conservation and growing of timber, to cooperate with State agencies in the consideration of such laws, and to investigate and promote practicable methods of insuring standing timber or growing forests from losses by fire and other causes.

SEC. 5. That there is hereby authorized to be appropriated annually, out of any money in the Treasury not otherwise appropriated, the sum of \$1,000,000, to enable the Secretary of Agriculture to purchase or otherwise obtain forest-tree seed and nursery stock, to establish and maintain forest nurseries in the national forests, to sow and plant denuded lands within the national forests with forest trees, and to conduct necessary experiments and investigations in connection with such sowing and planting, including all necessary expenses incident thereto.

SEC. 6. That there is hereby authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, the sum of \$50,000,000, to be made available at such times and in such amounts as may be required and recommended by the National Forest Reservation Commission for carry-

ing out the purposes of the Act of March 1, 1911, entitled "An Act to enable any State to cooperate with any other State or States, or with the United States, for the protection of the watersheds of navigable streams, and to appoint a commission for the acquisition of lands for the purpose of conserving the navigability of navigable rivers," as amended.

SEC. 7. That the Secretary of Agriculture is hereby authorized to locate, examine, survey, and with the approval of the National Forest Reservation Commission, and at the price or prices fixed by it, to purchase lands chiefly suitable for forest production in any part of the continental United States, whether the control of such lands will promote or protect the navigation of streams on whose watersheds they lie or otherwise; and the appropriations authorized for the purchase of lands under the Act of March 1, 1911, entitled "An Act to enable any State to cooperate with any other State or States, or with the United States, for the protection of the watersheds of navigable streams, and to appoint a commission for the acquisition of lands for the purpose of conserving the navigability of navigable rivers," are herewith also authorized for the purposes named in this section: *Provided*, That all of the provisions of the aforesaid Act of March 1, 1911, as amended, not inconsistent with the provisions of this section, shall apply to any lands so purchased.

SEC. 8. That the Secretary of the Interior be, and hereby is, authorized to accept on behalf of the United States title to any lands within or adjacent to exterior boundaries of national forests if, in the opinion of the Secretary of Agriculture, the public interests will be benefited thereby and the lands are chiefly valuable for national forest purposes, and in exchange therefor may give not to exceed an equal value of such national forest land or timber or assignable certificates for timber within the national forests as may be determined by the Secretary of Agriculture and accepted by the owner as fair compensation, consideration being given to any reservations which either the grantor or the Government may make of timber, minerals, or easements. Such assignable certificates for timber shall be issued under the authority of the Secretary of Agriculture, shall be for the agreed values of the lands acquired, and shall be accepted at their face value, when accompanying bids, for the purchase of national forest timber or in payment for national forest timber purchased under existing laws and regulations. Any timber given under such exchanges shall be cut and removed under the direction and supervision and in accordance with the requirements of the Secretary of Agriculture. Lands conveyed to the United States under this section shall, upon acceptance of title, become parts of such national forests as the Secretary of Agriculture shall designate: *Provided*, That the Secretary of the Interior shall report to Congress annually the quantities of such land exchanges as are consummated and the names of the parties thereto.

SEC. 9. That all lands now embraced in national forests or national parks which are owned by the United States or subject to disposition by the United States, including unreserved public land, lands covered by former patents, or grants which have reverted in the United States and Indian reservations, and all lands of the character herein defined which may hereafter be acquired by the United States, with the exception of military, naval, lighthouse, and other special reservations, which are classified by the Secretary of Agriculture and approved by the National Forest Reservation Commission as valuable chiefly for the production of timber or protection of watersheds, shall be, and the same are hereby, withheld from all forms of entry, appropriation, or allotment, except mineral entries authorized under existing law, from and after the date of the filing of such classification with the Secretary of the Interior; and the lands so classified shall remain withdrawn from any form of entry or appropriation as aforesaid, with the exception of mineral entries authorized under existing law, until the Congress shall direct otherwise; and there is hereby authorized to be appropriated, out of any money in the Treasury not otherwise appropriated, the sum of \$1,000,000, to be made available at such times and in such amounts as may be required and recommended by the Secretary of Agriculture to enable him to classify and determine the areas of the lands herein defined which are valuable chiefly for the production of timber or protection of watersheds: *Provided*, That nothing herein contained shall affect the standing of any valid claim, entry, or allotment existing on such lands at the date of their classification or the equities or rights of the claimants or entrymen thereunder.

SEC. 10. That the National Forest Reservation Commission, created pursuant to the Act of March 1, 1911, is hereby authorized and directed to recommend to the President of the United States the incorporation in national forests of any lands classified as valuable chiefly for the production of timber or protection of watersheds and withdrawn from entry under the preceding section, which, in the judgment of said commission are adapted to national forest purposes. Said commission is further authorized to determine the value of any lands so withdrawn which are the property of Indian tribes, and to make recommendations to Congress for the purchase of such lands or otherwise for the liquidation of the equities of such Indian tribes therein.

SEC. 11. That the President of the United States is hereby authorized, in his discretion, upon recommendation of the National Forest Reservation Commission, to incorporate in national forests, now existing or which the President by Executive proclamation may create, any lands classified and withdrawn as defined in section 9 herein; but the addition to any national forest of such lands shall not affect any valid claims, entries, or allotments existing at the date of their withdrawal, and to the rights, equities or title of any Indian tribes: *Provided*, That the President may, in his discretion, incorporate in national forests all or any portion of military, naval, or other special reservations, not including national parks, or any lands acquired by the United States through gift, bequest, or otherwise which are chiefly valuable for the production of timber or protection of watersheds under such regulations, or conditions as he deems wise with respect to the use of such lands for military, naval, or other purposes: *Provided further*, That it is the intent and purpose of this Act that should any part thereof fail because of ambiguity or other reason, such failure shall not be construed as adversely affecting the remaining parts.

THE CAPPER BILL

Senator Capper introduced the following bill on May 2, 1921. It was referred to the Committee on Agriculture and Forestry:

A Bill to control forest devastation, to perpetuate forests in the United States, to raise a revenue from forest products, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

DEFINITIONS.

That, when used in this Act—

"Commercial forest land" means all private land within the United States which is now or hereafter in forest, except farm wood lots as in this section defined, and except such land as the Secretary shall have caused to be examined at any time and shall have found to be at such time chiefly valuable for other uses than the growth of forest crops. And the Secretary is hereby authorized in his discretion to cause such examination to be made. "Farm wood lot" means land which is a part of a farm, whether contiguous or not, and is used as a subsidiary source of farm supply or farm revenue, but which is otherwise like commercial forest land as defined in this section.

"Forest crop" means the wood of trees on forest land.

"Harvesting a forest crop" means the felling of trees on forest land, together with the production therefrom of one or more raw forest products and/or the removal of such products for sale, consumption, or use.

"Forest devastation" means the harvesting of a forest crop otherwise than in compliance with standards established by regional and local regulations made under section 3 of this Act.

"Operator" means any person who is engaged in the business of harvesting, or causing to be harvested, for himself, one or more forest crops on commercial forest land.

"Raw forest product" means the wood of felled forest trees, prepared for removal from the place of felling to be sold, used, or consumed, such as logs, poles, piles, round mine timbers, round or split posts, split staves, pulp wood, fuel wood, other cordwood, hewn ties, hewn timbers, bolts, and the like.

"Standard log scale" means such uniform scale for the measurement in board feet of the volume of all raw forest products as the Forester, with the approval of the Secretary, shall by regulations prescribe; and such regulations may provide for the conversion of measurements in any log scale, or in any cord measure, or in any other measure of raw forest products, into their equivalent in units of the standard log scale.

"Taxable product" means a raw forest product produced from trees felled on commercial forest lands by any operator.

"Standard product" means a taxable product produced from such part of a forest crop as is harvested in compliance with standards established and defined by regional and local regulations under section 3 of this Act.

"Product below standard" means a taxable product produced from such part of a forest crop as is harvested otherwise than in compliance with standards established under section 3 of this Act.

"Secretary" means the Secretary of Agriculture.

"Forester" means the Forester of the United States Department of Agriculture.

"Regional forester" means any officer or agent of the United States designated by the Secretary to perform the duties imposed on regional foresters by this Act.

"Person" means and includes a natural person, partnership, association, company, or corporation, and any officer, receiver, or employee of any of them, and any member of a partnership who as such officer, receiver, employee, or member is under a duty imposed by this Act or by any regulations under this Act.

FOREST REGIONS

Sec. 3. (a) That the Secretary shall divide, and may from time to time redivide, the United States into forest regions, which shall be delimited as he shall deem best in view of forest and economic conditions, in order that the standards established and defined by regional and local regulations under section 3 of this Act may be adapted to and applied in accord with local forest and economic conditions. The Secretary may conform the national forest districts to said forest regions.

ADMINISTRATION.

(b) That the Secretary shall establish in the forest regions provided for in subsection (a) of this section, and in the District of Columbia, such service as he shall deem necessary for the administration of this Act; and, upon due request from the proper authorities of States with which the Secretary is cooperating under section 12 hereof, he may deputize State forest officials to assist in the administration of this Act.

HARVESTING REGULATIONS.

Sec. 3. That in order that this Act may be applied locally in accord with regional and local forest and economic conditions—

(a) The Secretary shall make, and may from time to time amend, regulations establishing and defining in general terms as to each forest region such reasonable standards for the harvesting of forest crops as he shall deem necessary to secure in such region a continuous succession of forest crops of reasonable quantity and quality.

(b) The regional forester of each forest region, with the approval of the Forester, shall make, and may from time to time amend, local regulations, not inconsistent with the regional regulations, establishing and defining as to any locality therein such reasonable standards for the harvesting of forest crops as he may deem necessary to secure in such locality a continuous succession of forest crops of reasonable quantity and quality.

(c) Standards established and defined by regional and local regulations under subsections (a) and (b) of this section may include such measures as protection of trees left standing, disposal of slash, reduction of fire hazards due to harvesting, temporary reservation from harvesting of such trees as may be necessary for the perpetuation of forest growth, or, on the request of the operator approved by the Forester, subject to conditions prescribed in such approval, reforestation by planting in lieu of such reservation, and the like.

(d) Before the making of regional regulations as to any region under subsection (a) of this section, the Secretary shall seek the cooperation of an advisory board as to such region, to consist of the State officials in charge of forest work in the States concerned and one representative each from such lumbermen's and wood-users' organizations as he may designate; and before the making of local regulations under subsection (b) of this section the regional forester shall seek the cooperation of a similar advisory board as to each locality, such advisory boards, at their option, to function as standing advisory bodies on matters relating to the practical application of the regulations and such amendments to them as may from time to time be advisable.

CLASSIFICATION AND RETURN OF TAXABLE PRODUCTS.

Sec. 4. That every operator shall truly classify as standard products, or

as products below standard, all taxable products produced by him during each year, and shall make return thereof as and when required by regulations under subsection (a) of section 7 of this Act.

INSTRUCTIONS IN 1922

Sec. 5. That the Forester shall, so far as practicable, cause to be inspected on the ground, during the calendar year 1922, harvesting operations on commercial forest lands, for the purpose of instructing operators or their agents on the ground in the method of applying the standards established by regulations under section 3 of this Act.

TAXES.

Sec. 6. That for each calendar year after 1921 there shall be levied, assessed, and collected, and shall be paid by every operator, an excise tax on the privilege or franchise of conducting the business of harvesting forest crops on commercial forest lands, measured by the quantities of taxable products produced by him in such year, as follows: For the calendar year 1922, at the rate of 5 cents per thousand board feet standard log scale in respect of all taxable products; and for each and every calendar year thereafter at the rate of 5 cents per thousand board feet standard log scale in respect of standard products, and at the rate of \$5 per thousand board feet standard log scale in respect of products below standard.

RETURN AND PAYMENTS.

Sec. 7. (a) That on or before the 15th day of March, 1923, and each year thereafter, each operator shall make, under oath, return for the preceding calendar year, stating specifically the quantities, in board feet standard log scale, of standard products and of products below standard, respectively, produced by him during such preceding calendar year, from trees felled in his harvesting of forest crops on commercial forest lands. Such return shall be made in duplicate, one duplicate to the collector of internal revenue for the district wherein is located such operator's place of business, the other duplicate to the regional forester for the forest region wherein is located such place of business. On or before each such March 15 every such operator shall pay to such collector the taxes imposed by section 6 of this Act in respect of the taxable products produced by him during the preceding calendar year. The Forester and the Commissioner of Internal Revenue shall by joint regulations prescribe the form of such return and the form and manner of such payment.

ACCOUNTS AND RECORDS.

(b) That the Secretary is hereby authorized and required to make, and may from time to time amend, general regulations governing the classifying of taxable products under this Act and requiring the making and keeping of such records and accounts and the making of such statements and reports under oath, other than the returns required by subsection (a) of this section, and prescribing such forms for such accounts, records, statements, and reports as he shall deem necessary for his information in the administration of this Act. No such accounts, records, statements, or reports, and no part of the information given therein by any operator shall be disclosed to any other operator or to the public except as may be necessary in the course of and as a part of legal proceedings instituted for the enforcement of this Act, or as may be otherwise required in pursuance of law, and except in statistical form without identification of persons.

FIELD INSPECTION AND EXAMINATION OF ACCOUNTS.

(c) That the Secretary is hereby authorized to cause any officer or agent of the United States designated by him for that purpose to go upon and inspect any commercial forest land before, during, or after the harvesting of forest crops for all purposes connected with the administration of this Act, and the Forester and/or the Commissioner of Internal Revenue, for the purpose of ascertaining the correctness of any record, account, statement, report, or return required under this Act, or for the purpose of making the return where none has been made, are hereby authorized to cause any officer or agent of the United States designated by either of them for that purpose to examine any records, accounts, books, papers, or memoranda bearing upon any matter required to be included in any such record, account, statement, report, or return, and may require the attendance of the person making or keeping the record, account, statement, report, or return, or the attendance of any other person having knowledge in the premises and may take his testimony with reference to the matters required by law or by regulation under this Act, to be included in such record, account, statement, report, or return, with the power to administer oaths to such person or persons.

Sec. 8. That the provisions of sections 3164, 3165, 3167, 3172, 3173, and 3176 of the Revised Statutes, as amended by the Revenue Act approved February 24, 1919 (Statutes at Large, volume 40, pages 1146 to 1148, inclusive), so far as they are not inconsistent with this Act, shall apply to the administration of and proceedings under this Act: *Provided*, That no return in addition to the return required by subsection (a) of section 7 of this Act shall be required under the first sentence of said section 3173 preceding the first proviso thereof.

PENALTIES.

Sec. 9. That every person who—

(a) Knowingly classifies any taxable product untruthly or in violation of regulations made under this Act, or knowingly causes or permits such untrue or violative classification to be made; or

(b) Knowingly in any manner falsifies or causes or permits to be falsified any record, account, statement, report, or return required to be made or kept under this Act or regulations made under this Act; or

(c) Willfully refuses to pay or truly account for and pay over any tax imposed by this Act when and as required by this Act or by regulations under this Act, or willfully attempts in any manner to evade such tax—

Shall be punished by a fine of not more than \$5,000 or by imprisonment for not more than one year or by both such fine and imprisonment in the discretion of the court.

CUMULATIVE PENALTY.

Sec. 10. That any person found guilty under subsection (c) of section 9 of this Act shall, notwithstanding other penalties provided by law, be liable to pay the amount of the tax evaded or not paid, to be assessed and collected in the same manner as taxes are assessed and collected.

APPROPRIATION.

Sec. 11. That appropriations are hereby authorized to be made annually out of any money in the Treasury not otherwise appropriated, to be expended under the directions of the Secretary for carrying out the purposes of sections 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10 of this Act.

CANADIAN DEPARTMENT

BY ELLWOOD WILSON

PAST PRESIDENT CANADIAN SOCIETY OF FOREST ENGINEERS

MUCH interest is being evinced in the forestry situation and methods in Sweden by the pulp and paper industry in Canada. At the suggestion of the Canadian Pulp and Paper Association, the Chief Forester of Quebec has gone to Sweden, the Chief Forester of Ontario will probably go, and the Association is sending its own representative, Mr. Edward Beck, to study forestry policies and methods of reforestation, management and logging. Many Swedish foresters and men interested in the pulp and paper industry have visited Canada during the past year and a close rapprochement is being established between the two countries. Of especial interest is the Swedish method of passing from a virgin to a managed forest, the method of determining the annual cut and also the policy pursued by the Government in its supervision of private lands.

The forestry situation has improved materially in Eastern Canada during the past year. The Governments have taken much more interest in the management of their forests and they are feeling their way toward the regulation of the amount to be cut and the substitution of the diameter limit of cutting by a rational and carefully prepared working plan. In cooperation with the Quebec Government, several of the large companies are preparing working plans for their licensed lands, which, if approved, will be carefully carried out and will put their holdings on a practical forestry basis.

The Laurentide Company, Ltd. has made such an arrangement with the Quebec Government and has foresters now inspecting and reporting on the territory to be cut next fall and winter. Their recommendations will be laid before the Government the end of May and permission asked to carry them out. This company has also brought, this spring, all its logging inspectors and scalers down to the mill to study the utilization of the wood they are making and to familiarize themselves with the various processes through which it must pass, so that they can intelligently cooperate with the mill men in the thorough utilization of as much of the tree as is possible and the elimination of waste.

It is understood that the Dayton-Wright Company, of Dayton are building for the Spanish River Pulp and Paper Company a special airplane or rather hydroplane for use in mapping forest lands. This machine will be of the float type, will be entirely enclosed and so arranged that the photographer and observer will be housed

in and have a perfectly clear view of the land over which they are flying and will be able to take notes, make sketches and take photographs with as much ease as if they were in an office. The machine will have a low landing speed so as to make it safe and will have a wide radius of action. This is the first machine which has been designed especially for forestry work and its use will be watched with the greatest interest.

The machines of the Laurentide Company are ready to take the air and a large summer's work is anticipated. Plans made call for the photographic mapping of 2000 square miles of territory and forest fires will also be spotted and reported. Log drives will be inspected from the air and progress photos made of them. Territory cut over the past season will be photographed in order to bring the forest maps up to date and to see how the work has been done. Photographs taken last season showed, in one case very clearly, logs that had not been taken out, skidding and hauling roads, timber which should have been cut but was not and the general condition of the country logged. Foresters, logging superintendents and others who have business in the woods will be carried to and from the districts where they are working and territory where boundary lines are to be run will be photographed so that provisions can be put on lakes to be crossed by the lines, so that the survey crew will not have to carry them all along the line. This will save much time, work and expense, as often provisions on boundary lines have to be taken over or around difficult ridges. At each mile openings about 15 feet in diameter will be cleared so that later photos will show the mile posts and give a check on the scale of the photos.

It was rumored at the opening of Parliament that the Commission of Conservation would be abolished and its duties divided among other departments. No further news has been given out about the proposed change and it is sincerely to be hoped that nothing more will be done. The excuse given was economy. It was said that all the work done by the Commission really came under and could be done by other Departments. This is true, but the fact remains that nothing was done by such Departments and they felt more or less that their work was criticized by the formation of the Commission. Government Departments so soon degenerate into mere administrative machines, losing their initiative and the sense of proportion



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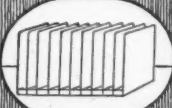
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in their work. They develop "red-tape-ities" and the chiefs spend a lot of time signing papers when they should be thinking about practical work. The Commission of Conservation broke into entirely new ground. It did a large amount of research work and developed, especially in its forestry work, the principal of cooperation. In this way it only paid half the cost of many projects, the other half being donated by private agencies. It showed much initiative and a wonderful spirit of cooperation and public service.

THE VALUE OF OUR NATIONAL PARKS

(Continued from Page 359)

the country in which they are located; the hundreds of thousands of visitors leave their money along the way, and many, through this intimate contact, become so impressed with the appeal of the country that they become not only investors, but settlers in the community. They come from all sections of the country; every State yearly sends its delegation. From a hard-headed business standpoint we must acknowledge that tremendous advantages accrue locally and nationally through the position of such lodestones of travel as the scenic areas that comprise our National Park system. It is therefore our duty to carefully guard these areas as the exponents of the best that is to be found in our national scenery.

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OUR FORESTS

Retrospect and Prospect

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The United States can not only save to itself its present great asset of forests through the operation of the forces which would be set in motion by the enactment of the Snell Bill, introduced in the House of Representatives on the first day of the present session, but in time the intelligent and nation-wide pursuit of this policy will result in there being obtained the highest productive efficiency on all lands in the United States suitable for forest growth.

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By Wheatland Civic Club: Lewis Melton McCurry, Wilton L. McDonald, Claude Boswell, McKinley Parker Brock.

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By The Woman's Club: Edwin Brown, Aubrey Kief, Dr. Earl F. Smith, Glen K. Spencer, James A. Wimmer, Harry B. Cadwell, Victor Prevost, Eugene Smith, Dr. Ray R. Taylor.

CHICAGO, ILL.

By Chipilly Post, No. 310, American Legion: Warren H. Brust.

DES PLAINES, ILL.

By Des Plaines Women's Club: Dorothy Budlong.

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By Harvey Public Schools: The Unknown Dead.

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By Seminary Lodge, No. 461, F. A. M.: Pierce McLauren Cranford.

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By Parisppanong Chapter, D. A. R.: Boys Who Enlisted in the World War.

CUBA, N. Y.

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By Liverpool Post No. 188, American Legion: Alexander R. Klunder, John A. Smith, Herbert W. Crawford, Joseph A. Selinsky, Eric Skjlbred, Harry G. Whitman.

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Herbert W. De Long, Charles Ennis, Harry Forman, Umberto Fortunato, Louis Gerstein, Wasell Goraza, Lee Grubbs, Ferrand R. Guthrie, Francis P. Harmon, William C. Hasler, Gunder Haug, Frank Heinzl, Louis Hyman, Charles F. Kirk, William J. Lane, Jacob Levy, John Lick, John Manning, Cone A. Mea, William Miller, Lindsay E. Murdock, John J. Mooney, William C. E. Nelson, Frederick W. Newsome, John T. O'Neill, Gustav Peeha, Carmello Pisano, James P. J. Quigg, Benjamin W. Roth, John A. Segnit, Jr., Clarence D. Shomers, Jack Slotopolsky, George Anthony Smith, Charles Stauderman, Charles Steigelman, Albert C. Steiner, Andrew Stuessy, Robert Smith, John J. Urgo, Joseph Vandenberg, Edgar Walker, John S. Weir, John C. O'Brien, Phillip J. Scudder. By Company K, 307th Infantry, 77th Div.: Lt. Herbert L. Miller, Sgt. Jacob Hochman, Corp. William H. Brown, Corp. Albert J. Gotti, Corp. Edward J. Malone, Corp. Walter E. Peiffer, Corp. David R. Peck, Corp. Louis Rust, Corp. Isaac Tinsower, Corp. Gustave Wagner, Tobias Ammon, Carl A. Anderson, Gustave Anderson, John Bang, Bert L. Blowers, Patrick J. Cafferty, Roscoe G. Church, Arthur E. Coffin, Harvey R. Cole, William P. Crouse, James Folliart, Frank H. Garret, Charles Johnson, John Kanthak, David Klein, Michael Lekan, John Linardo, Frank I. Lipasti, James Mahoney, John Manfredi, John Meehan, John Joseph Palkey, Emil Jerry, Benjamin Roberts, Nabbruck, John Neitzibile, Joseph Palermo, Wilbert T. Rumsey, Gustave Schmidt, Lawrence Seamolla, Frank Stingle, William H. Stoll, George Swackhammer, Wladslaw Szablinski, Walton W. Woodland, Sgt. James J. Murphy, John J. Shea.

ROCKY MOUNT, N. C.

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WILMINGTON, N. C.

By a Friend: Joyce Kilmer, Wilmington Boys.

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CRAFTON, PA.

By Crafton Chapter, Service Star Legion: Crafton Heroes.

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By the Civic Club on the Parkway: Newton L. Bosler, Donald A. Ashmore, William Ashton, Edgar W. Baird, Matthew Baird, Jr., John K. Yates, Jay Cook, 2d, W. H. A. Schultz, Edward M. Biddle, Julien Cornell Biddle, William Martin, Thomas Ryder, Ned Knott, James Mellor, Henry Edward Paul Pritchard, Richard Stockton Bullitt, Knox Boude Birney, Thomas Graham Hirst, Anson F. Carnill, Samuel Emlen Carpenter, Jr., Rubin Dobbins, James Patchell, Maxwell McKeen, Robert Howard Gamble, Joseph F. Murphy, Burton E. Chandler, Alfred Reginald Allen, Wm. Nelson Corner, Richard Foulke Day, Edward L. Davis, Franklin Archibald Dick, Col. Theodore Roosevelt, Mortimer Park Crane, Charles Thomas Evans, Jr., George B. Evans, Jr., Lawrence W. Fox, Paul Sykes, Thomas G. Fox, Arthur Holler, Wm. Goddell Freeman, Arthur H. Dutton, Franklin B. Pepper, Clarence Patton Freeman, J. Paul Lloyd, Dr. Howard Kennedy Hill, William F. Harity, Jr., Quentin Roosevelt, Vinton Adams Dearing, Elisha Boudinot Keith, Wm. C. Junkin, Albert Louis Miller, Hobart A. H. Baker, Paul Borda Kurtz, Lewis G. Smith, William Henderson Long, Taylor Every Walthour, Edwin Thorp Van Dusen, J. Baird Atwood, Leon C. McArdle, J. Franklin McFadden, Edward F. Bennis, Jr., Louise Hortense Snowden, David E. Williams, Joseph Smiler, Smedley Darlington Butler, Charles W. Pickering, Jr., Wilson Potter, Wistar Morris, H. Harland Skerrett, Jr., Edward L. Clark, H. Harrison Smith, Minot Jones, Jaques Fiechter, William B. Dixon, Harry T. Rogers, Jr., George C. Rogers, Charles H. Zimmerman, Jr., Norton Downs, Harry Ingersoll, W. H. Warden, Jr., Henry S. Shuster, Preston M. Wright, John Strauss, Edmond Charles Clinton Genet, John W. Carr, Elisha Kent Kane, William Geizer, J. Walter Lees, John Loudenslager, Benjamin Bullock, Charles William Bergner, Henry Rawle Pemberton, Harry Cook, Richard McCall Elliott, Jr., Gordon Nilsson, Lovel Hardwick Barlow, William Simpson, Joseph Gray Duncan, George Armistead, Alfred Alexander Biddle, H. R. Houston Woodward, Anthony J. Dallett, William Howell McCreary, George Woodward, Jr., Samuel Hazelhurst, Leslie Shaw Betts, Charles M. Betts, Edward Clemmens Cassard, Edward E. Denniston, Henry Slocum Wagner, Paul Wheatley Sutro, Charles Wartham Newkirk, Wilbur C. Sinter, Elmer Franklin Rice, Phinias Prouty Christy, Herbert W. Warden, Jr., Rodney Kenneth Bonsall, John McT. Somers, Arthur M. Stephenson, Dr. William F. Guilfoyle, Horace Lyman, William Woodward Arnett, John Hancock Arnett, Antonio di Fabbio, James J. Boyle, Andrew Wheeler, Jr., John C. Wister, Robert Gilpin Ervin, Charles Edward Gilpin Ervin, Howard Houston Henry, George Ritter, Elizabeth Campbell

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By League of Women Voters, 19th Ward: Carl Schreiber. By Service Star Legion: Beechview Heroes. By East Liberty Service Star Legion: William R. Carlisle, William L. Neilson, Paul E. Baker, Herbert F. Coy, Kenneth A. Moorhead, George E. Appleton, Henry A. Wipfler, Lester L. Rohe, Lloyd L. Denlinger, James J. Costello, James H. Young, For Our Heroes. By Mrs. Bella Hay: Sgt. Harry S. Hay. By M. O. D.: John Morrow Unit. By Service Star Legion: 5th Ward Heroes.

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WYALUSING, PA.

By County Civic League: Our Bradford County Heroes.

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By Ida Austin Bible Class: Lt. Guyton Smith.

VANDERWERTEN, VA.

By Neighborhood House, Congregational Church: Capt. W. W. Burns, A. H. Dadman, Steven Hughes, Lewis C. Freeny, Col. Charles Lynch.

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WHEELING, W. VA.

By Women's Club: Our Heroes of the Late War, William Rhodes, Edward Bowman, Vincent Davis, Harry Davis, Elwood Bauer.

FOND DU LAC, WIS.

By Woman's Club, Soldiers of the World War. By Edwin A. Brown Post, Woman's Relief Corps No. 35: Nurses of the World War.

LAKE GENEVA, WIS.

By Lake Geneva Women's Club: Corp. Frank Kreisen, Wm. Faver, Elmer Kutzman, Harry Kelley, Robert Ledger, Henning Pearson, Warren Semnicht, Robert Smith, George Trapp.

MILTON, WIS.

By Randolph Unit, Service Star Legion: Fallen Heroes.

REDWOOD GROVE SAVED

ONE of Humboldt County's choicest groves of *Sequoia sempervirens*, or redwood has been saved for the enjoyment of posterity through the purchase of this grove by the county. The area preserved is known as the Dunn and Dimmick holding, and is situated on the South Fork of the Eel River, adjoining the scenic State highway through Humboldt County. The purchase of this redwood tract is part of Humboldt County's program of cooperation with the Save the Redwoods League, which is endeavoring to secure the preservation of representative redwood

groves in the basin of the South Fork of the Eel River. The League, of which Franklin K. Lane is president, has, with the co-operation of Humboldt County, acquired several important pieces of redwood timber.

Many travelers and scientists have declared that the road through the Humboldt redwoods is one of the great scenic highways of the world. They are enthusiastic advocates of the preservation of these trees.

BARRELS MADE OF PAPER

FARMERS and manufacturers have felt the ever-increasing cost of barrels, and it has been pointed out on more than one occasion that barrels are playing no small role in the general high-cost-of-living scheme, says the *Scientific American*.

For some time inventors have been at work on the barrel problem with a view to producing cheaper containers. Several of them have tackled the paper barrel problem and it appears as though their work has finally materialized into something of



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ELEVEN-GALLON BARREL MADE OF PAPER AND COSTING ONE-THIRD AS MUCH AS A WOODEN ONE

practical value. These paper barrels are generally made in the form of many layers of stiff paper, held together by some suitable adhesive which may also be watertight and weatherproof.

The barrel shown in the accompanying illustration is made by a winding process employing chip board, and is said to cost one-third less than a wooden barrel of equivalent size. The inventor also claims greater strength for this paper barrel.

Paper cans and other containers can be made of wound paper, and no doubt much will be done along this line in the near future.

*There is a vale in Flemish land,
A vale once fair to see,
Where under the sweep of the sky's wide arch,
Tho' winter freeze or summer march,
The stately poplars march and march,
Remembering Lombardy.*

—CLINTON SCOLLARD.

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EFFECT OF SLOPE ON FOREST FIRES

ON south slopes of mountains and hills the per cent of destructive fires is twice as great as on north slopes and three and a half times as great as on level land, states S. B. Shaw, Forest Examiner, after an exhaustive study of the subject in California, as quoted by *The Forest Patrolman*, Portland, Oregon. He also has found that in the early and late parts of the fire season a very high per cent of all fires occurs on the south slopes while during the peak of the fire season north and south slopes are about equally represented; that during a period of years 65 per cent more fires have occurred on south slopes than on north slopes and, on the average, fires occur on north slopes only 80 per cent as often as on south. The east and west slopes in the state occupy an intermediate position between north and south slopes. It is claimed that at least as a partial cause, the higher percentage of fires on south slopes is due to the greater proportion of brush fields because fires in brush spread more rapidly than in timber, and there is more moisture on north slopes than on south ones.

WOMAN'S EFFORTS BRING SHADE TO TREELESS TOWN

THIS year Freedom, Wyoming, is enjoying the novelty of shade trees along its streets and on its lawns because one of its woman residents had vision enough to see trees there and determination enough to get them planted. This public-spirited individual set as her goal 250 trees in Freedom in six months, but so popular did the movement become that early summer found 1,460 trees planted.

Freedom is located in the treeless portion of Wyoming. No native trees grow there, and up to this year none had been imported. The shadeless streets and lawns were unquestionably in need of trees, both for comfort and beauty, but as nothing was done about it they remained treeless. Last year the woman who decided that Freedom had gone treeless long enough wrote the State home demonstration leader—the local women were not organized into a club—and asked if she could help her start a movement to plant trees in her town. The State leader suggested that she write the forestry division at the State Agricultural College and ask what kind of tree would do best in that part of the State. She was advised that blue spruce did very well there and that the division would be glad to furnish them to the town for 4 or 5 cents apiece.

The price was so nominal and the desire for trees so strong among Freedom residents that once an opportunity was given to acquire them with little effort everyone wanted trees, and the result was 1,460 planted in the town in six months.



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BURROUGHS MEMORIAL FOREST

ON the shoulder of Rose Mountain north of Big Indian the 25 boys of the Raymond Riordon School Conservation Unit entrusted with the mission by the Conservation Commission of the State of New York have finished planting the first section of the Burroughs State Memorial Forest, says the *Kingston (N. Y.) Daily Freeman*.

The first 3,000 trees were planted while snow was in the air and two mornings the boys turned out of their tents in one of the ravines on the mountainside to find the ground white. Although they ranged from 11 to 19 years of age and were sheltered only by canvas during the entire week there was not a single case of sickness in the camp.

Two hours of study each morning, six hours on the planting line a mile above their camp on the mountain, the cooking of their own food and the keeping of their camp in proper shape during the entire week, make up a story of typical American boy accomplishment, under heavy weather handicap.

A total of 14,000 trees were planted by the boys—10,000 spruce yearlings and 4,000 Scotch pine four year olds. It is announced that the mountain is to be rechristened Burroughs Mountain in honor of the famous naturalist in whose memory the forest is to be established and maintained by school boys of the state.

FLORIDA FRUIT GROWERS WANT REFORESTATION

THE eaters of Florida oranges and grapefruit may not think of reforestation as in any way affecting their breakfast tables, but the Florida citrus fruit growers have a different point of view, according to forestry officials of the United States, who have found the leaders of the industry anxious about future supplies of box material.

The Florida grapefruit and orange crop now requires on the average more than 12,000,000 boxes yearly to get it to market. It has a money value of something like \$30,000,000, and the industry is still expanding rapidly. By 1930, if production continues to increase in similar ratio to that in recent years, the output will require 40,000,000 boxes annually. Each box requires about five and one-half board feet of lumber.

Local southern pine forests are the source of the raw material for these boxes, but the supply is drawn upon also for wooden containers for the products of Florida truck farms.

Forest depletion under methods which do not provide for regrowth has reached a point which makes the question where containers are to come from a matter of very practical concern to the citrus industry in Florida.

The Government has a National Forest in Florida of over 300,000 acres, on which the practicability of forest management for

BECOME A MEMBER

Any person may become a member of the American Forestry Association upon application and payment of dues.

PLANT TREES
PROTECT FORESTS
USE FORESTS

FILL OUT THIS BLANK:—

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I hereby request membership in the American Forestry Association and enclose check for \$.....

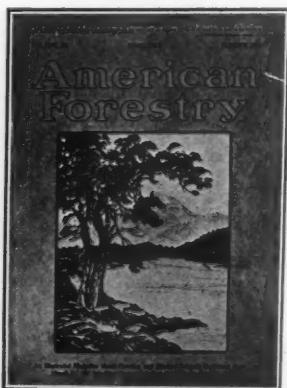
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This is the only Popular National Magazine devoted to trees and forests and the use of wood.

a sustained yield has been fully demonstrated, according to the Forest Service, but the lumber needs of the State will require a very much larger acreage than this.

SUMMER HOMES ON THE NATIONAL FORESTS

THAT the use of the National Forests for recreational purposes is increasing rapidly and bids fair to rank third among the major services performed by the National Forests, with only timber production and stream-flow regulation taking precedence over it, is the statement made by Colonel W. B. Greeley, head of the Forest Service, in his annual report. Many summer homes are being erected on the National Forests by private individuals, and the use of forests for other forms of out-of-door recreation was greater during the past year than ever before.

The summer home business promises to become an important source of revenue, Colonel Greeley points out. On the Angeles Forest in southern California, for example, a total of 1,329 permits for summer residences and commercial resorts were, he says, in effect at the close of the past fiscal year. The revenue from this one item amounted to approximately \$22,000. It is believed that within a few years the revenues obtained from the various recreational settlements within the Angeles Forest will pay the entire cost of protection and administration.

A MECHANICAL MONSTER

A gigantic machine, with jaws which open to take in timber or assembled wood structures 30 feet in height and which can crush them like egg shells when the jaws close together again, has recently been erected at the Forest Products Laboratory at Madison, Wisconsin, says the United States Forest Service.

This machine is to be used for testing very large wooden columns. It is possible to exert a force of a million pounds with it, and it is built to crush a wooden post a foot square. Its great range of testing speeds enables it to apply its tremendous load with the fatiguing slowness of a building settling on its foundation timbers or with the speed of a train dashing onto a wooden trestle.

PENNSYLVANIA TO REFOREST

THE Pennsylvania Department of Forestry expects to grow about 15,000,000 trees for reforesting 10,000 acres of waste land in this State from the seed it is planting in its forest tree nurseries this spring. The Department has collected 700 pounds of white pine, hemlock, and black locust seed, and 260 bushels of black walnuts, acorns, and ash and maple seeds. Six hundred and sixty pounds of pine, spruce, and larch seed have been purchased by the Department.

You Sing America, Why Not SEE IT?



DENVER THE GATEWAY

TO 12 NATIONAL PARKS
AND 32 NATIONAL MONUMENTS

Artists, writers and lecturers cannot do justice to the historic and scenic wonders in America's National Parks, Monuments and Forests. Massive groups of towering, sun-kissed, snow-capped mountain peaks and forests—America's water-sheds on the backbone of the continent—God-made parks with man-made auto roads and trails, beautiful pine-clad canyons, gorges, glaciers, glorious sunsets, wild flowers, giant trees, trout streams, hidden lakes, geysers, pre-historic animals, ruins of Cliff Dwellers and Aztecs. A description would bankrupt the English language. The human eye only can reproduce them; they must be seen to be appreciated. As National Parks, Monuments and Forests the United States is preserving their natural glory and usefulness as a heritage for all generations to see and use for rest, recreation, vacation and pleasure. Rocky Mountain National Park, the nearest and most popular National Park, Mesa Verde National Park, the Cliff Dweller ruins of Ancient America, and fifteen National Forests are in Colorado.

DENVER HAS A NEW \$250,000

FREE AUTO CAMP FOR MOTORISTS

Plan to enjoy your vacation in the National Parks and Forests. See Rocky Mountain National Park, Denver's Mountain Parks, Mesa Verde National Park, Arapahoe Glacier and take the Fall River Circle Trip; two days, 236 miles, crossing Continental Divide twice; the Peak-to-Peak Trip, Long's Peak to Pike's Peak; 20 miles on the rim of the Colorado Rockies and climb, hike, fish and camp in the National Parks and Forests.

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that tells where to go, what to see and how to enjoy camping, fishing, motoring, golf and scenic trips in cool, sunny Colorado.

The Denver Tourist Bureau

513 Seventeenth Street, Denver, Colorado

Branch Bureaus: Chicago, St. Louis, Kansas City, Colorado Springs.

(Continued From Page 404)

COOPERATIVE FIRE PROTECTION.

Sec. 12. That the Secretary is hereby authorized and directed to recommend for each forest region of the United States the essential requirements in protecting timber and cut-over lands from fire, and is further authorized, on such conditions as he may determine to be fair and reasonable in each State, to cooperate with the various States duly adopting his recommendations and through them with private and other agencies, in bringing into effect such essential requirements favorable for forest protection. In no case, other than for preliminary investigations, shall the amount expended by the Federal Government in any State during any fiscal year under this section exceed the amount expended by the State for the same purpose during the same fiscal year, including the expenditures of forest owners required by State law and approved by the proper State officials; and the Secretary is directed to withhold cooperation from States which do not comply in legislation and in administrative practice with such recommendations as shall be made in accordance with this section.

APPROPRIATION.

Sec. 13. That appropriations are hereby authorized to be made annually, out of any money in the Treasury not otherwise appropriated, to be available until expended under the direction of the Secretary for carrying out the purposes of Section 12 of this Act.

VOID PARTS.

Sec. 14. That it is the intent and purpose of this Act that should any part thereof fail because of ambiguity or other reason, such failure shall not be construed as adversely affecting the remaining parts.

SHORT TITLE.

Sec. 15. That this Act may be cited as the "Taxation of Forest Products Act, 1921."

The Snell Bill was introduced in the Senate on Friday, May 20, by Senator Medill McCormick.

Note—(The only changes in the McCormick Bill from the Snell Bill are the authorization for appropriations of \$1,000,000 instead of \$3,000,000 in Section 3 and of \$10,000,000 instead of \$50,000,000 in Section 6; together with an additional clause in Section 5 authorizing the Forest Service to co-operate with States, Counties, etc., in the planting of Memorial Highways and Forests.)

FORESTERS ATTENTION

AMERICAN FORESTRY will gladly print free of charge in this column advertisements of foresters, lumbermen and woodsmen, discharged or about to be discharged from military service, who want positions, or of persons having employment to offer such foresters, lumbermen or woodsmen.

POSITIONS WANTED

GRADUATE FORESTER, 31 years old, married, ex-service man, wants position as Forester. Private estate or operating pulp company preferred. Have had 10 years experience in forestry work and practical lumbering. Address Box 2040, care AMERICAN FORESTRY, Washington, D. C. (3-5-21)

WANTED—Position with lumber company. Graduate of 4-year college forestry course. Experience in wood technology, and the grading and selling of hardwood and yellow pine lumber. Address Box 2080, care AMERICAN FORESTRY MAGAZINE, Washington, D. C.

MARRIED MAN 30 years old, energetic, industrious and systematic, with two years training in forestry, wishes permanent position with a paper and pulp company. To begin with is willing to do most anything. Address Box 2055, care AMERICAN FORESTRY, Washington, D. C. (3-6-21)

TECHNICAL FORESTER with considerable experience in various phases of practical forestry and sawmill work, desires position with manufacturing concern in the East or Middle-West. Dry-kiln work, offering opportunity for development preferred. Address Box 2060, care AMERICAN FORESTRY, Washington, D. C.

YOUNG MAN, 36, single, technical trained and practical experience in forestry, tree surgery, landscaping and orchard care, wants to get in business for himself as city forester in an excellent location anywhere in the United States. Will also consider position as forester on large estate. Employed at present and best of references. Address Box 2065, care AMERICAN FORESTRY Magazine, Washington, D. C.

POSITION WANTED by young graduate forester. Six years practical field work in forestry and lumbering. Am now employed but desire change. Box 2075, care AMERICAN FORESTRY, Washington, D. C. (4-7-21)

FORESTRY GRADUATE, age 30, several years experience in forest work, including city forestry, tree surgery, and esthetic forest planting, reforestation, knowledge and experience in farming and farm machinery. At present employed along technical and administrative lines. Will be open near future for responsible position, preferably in development and management of private forest or estate. Box 2070, care AMERICAN FORESTRY Magazine, Washington, D. C. (4-7-21)

YOUNG MAN with master's degree in forestry and who also has had experience in city forestry, tree surgery, and esthetic forest planting desires a position in any phase of forestry—logging, lumbering, forest management, or city and esthetic forestry—where marked ability will bring advancement. Would also consider a position as part time instructor in botany, the remaining time as city forester. Have taught botany while a graduate student in one of the foremost universities in America. An ex-officer of the World War. Address Box 2080, care AMERICAN FORESTRY MAGAZINE, Washington, D. C. (4-6-21)

POSITION WANTED by graduate forester, veteran 10th Engineers, at present lumber inspector Pennsylvania System, experience in French forests, Southern Pine and Northern Hardwoods. Desire position as forester for private estate or other work. North preferred. Address Box 2085, care AMERICAN FORESTRY MAGAZINE, Washington, D. C. (4-6-21)

POSITION WANTED BY FORESTER. A healthy United States citizen, 36 years old, actively engaged in logging in equatorial America, where he has done considerable practical and scientific pioneer work, now wants to return to work under more civilized and progressive conditions. Has 12 years' bush and mill experience. He works best where difficulties and problems are greatest. He is a practical enthusiast for constructive and reconstructive forestry, and desires to make connection with a body recognizing said qualities. Address Box 2090, care of American Forestry Magazine, Washington, D. C. (6-8-21).

EX-SERVICE MAN wishes employment with some Forest Construction Concern or Irrigation Company which can use a young man who is a Technical High School Graduate, and who is a Mechanical Draftsman with some slight knowledge of plane surveying. Willing to work and can do same. Address Box 2095, AMERICAN FORESTRY MAGAZINE, Washington, D. C. (6-8-21)

POSITIONS OPEN

Nursery in Central West

Is looking for a capable, experienced young man, especially fitted for the growing of forest tree and evergreen seedlings for commercial purposes. Must be a man of initiative and one who can plan his work. Give references, facts and experience and state salary desired.

REPLY TO BOX 5000

CARE OF AMERICAN FORESTRY MAGAZINE
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A BOOK ON ANGLING

By FRANCIS FRANCIS. With an introduction by Sir Herbert Maxwell, Bart. A book that cannot fail to quicken the pulse of every fisherman. Angling from every angle, with a vast fund of piscatorial information and the living spirit of the great outdoors. It will also give the fisherman reader many a thrilling picture during winter nights when he must perforce dream of the days of sport to come. Numerous explanatory plates (8 in color). Octavo.....\$4.50

ENGLAND ASKS SYRACUSE FOR FOREST SPECIALISTS

ENGLAND has just paid a handsome compliment to the New York State College of Forestry at Syracuse and Dr. Harry P. Brown, Professor of Wood Technology, in that institution, by offering him the position of wood technologist in the Imperial Forest Research Institute, Dehra Dun, United Provinces, India. The offer to Dr. Brown came directly from the India Office, Whitehall, London, and was signed by Kershaw, Under Secretary of State of India.

Upon learning that Dr. Brown had been offered this position, Dr. Herbert Stone, Special Lecturer at the University of Cambridge, School of Forestry, and author of several books on forestry, wrote as follows:

"I am very glad to hear that you have an offer of a post in the Indian Forest Service at Dehra Dun. There is no service in the world where a man is so liberally treated. It is the Mecca of the pick of the younger men. The qualifications insisted upon for probationership are so severe that only the cleverest men can hope to

stand a chance. I know no one on this side that I should care to recommend. I congratulate the service in obtaining the best man."

During the seven years he has been connected with the College of Forestry Dr. Brown has built up a strong department and has contributed many articles to scientific and technical journals on the structure of wood. He has recently completed a book entitled "Forest Trees of New York" which will shortly appear as a bulletin to be issued by the College.

After mature deliberation Dr. Brown has decided to decline the offer and remain with the College of Forestry.

FORESTRY OPPORTUNITIES IN SOUTH AMERICA

THE prospect of large lumber operations in South America carried on by interests from the United States is opening a field of promising possibilities to the American forester. This situation has caused the faculty of the New York State College of Forestry to consider the advisability of increasing the language requirements of the Spanish course.

The value of Spanish to the American forester is a reflection of the growing scarcity of forests in the United States and Canada and the availability of the South American supply. The consequential high prices of wood products make lumbering in distant countries profitable. South America presents a new sphere of discovery in wood utilization as there are many species of trees about which little is known regarding their applicability to commercial purposes.

MAPPING LIGHTNING ZONES

THE time-worn theory that "lightning never strikes twice in the same place," has been modified by forest experts of the United States Department of Agriculture to this extent: Lightning very often strikes in nearly the same places. It has its zones, in other words, where its appearance may usually be counted on with each electrical storm.

With the accumulation of data on causes and locations of fires in the national forests, these lightning zones could be mapped out and protective measures introduced—such as fire lines, regulated grazing and cleaning out of dead trees—which would more or less automatically control lightning fires at the start, the foresters believe.

Next to campers and sparks from locomotives, lightning ranks third as the source of fires in the national forests. The records of the Forest Service of the department show that for the years 1914-1918, inclusive, lightning caused on the average 30 per cent of all fires reported. However, during 1920, a very unusual season, over 50 per cent of the 6,078 fires that occurred in the national forests were set by lightning.

YELLOW BIRCH IN NEW YORK

HOW the New York future forest can be aided by development of the yellow birch is the subject of the latest technical publications of the New York State College of Forestry at Syracuse, in which Professor Edward F. McCarthy, of the Department of Forest Utilization, and Professor H. C. Belyea, of the Department of Forest Engineering have compiled the results of an extensive study of conditions in New York, under the title "Yellow Birch and its Relation to the Adirondack Forest."

The bulletin contains the results of a study which took the two foresters into the northern forests with a party of assistants for many months, and also involves the utilization of birch for the paper industry.

The study will be of immense interest to the forest profession, because it is probably the most exhaustive study of yellow birch growth and forest conditions ever made.

IT PAYS TO PROTECT THE BIRDS

THE passage of the migratory-bird treaty act, it is estimated, has resulted in a total return, in actual food value to the hunters of the United States, of more than \$20,000,000. State officials have notified the Biological Survey of the United States Department of Agriculture that in Minnesota alone hunters report 2,058,400 ducks killed in 1919. As each of these birds may be considered to have a food value of at least 75 cents, the total return from them in food to this one State was about \$1,500,000. If it had been possible to sell these birds they would have brought twice that amount. The great value of game to the country is thus made evident.

That the passage and enforcement of the law preventing spring shooting and marketing of migratory game birds is now producing excellent results is pointed out by officials of the Biological Survey. Without such restrictions they say the game birds not only would be greatly reduced in numbers but in many instances would be brought near extinction. The Biological Survey, which is charged with the enforcement of the Federal law and regulations protecting migratory birds, is receiving reports from all sections of the country showing that with the protection now enjoyed by the birds their numbers are increasing each year, and that they are returning in spring to numerous breeding grounds which they have deserted for several years.

In addition to the food value of the game thus assured by continued protection, the restrictions on shooting made by the law tend to perpetuate hunting as a sport. This has a recreational value through outdoor pursuit in building up the physical health and strength of the more than 7,000,000 hunters in the United States who go out with the guns every fall.

PLEASANT THINGS
TAKEN FROM LETTERS
TO THE EDITOR

"Supervisor Charles DeMoisy has a crackerjack of an illustrated article in the Forest Recreation Department of AMERICAN FORESTRY for March," says the *Daily News Bulletin* of the Intermountain District of the Forest Service, and AMERICAN FORESTRY appreciates the comment.

"I was personally very well pleased with the manner in which the Beartooth article was published in AMERICAN FORESTRY, and our office has received many requests for additional information pertaining to the recreational opportunities afforded by the Beartooth."

R. T. FERGUSON.

"I have seen a copy of AMERICAN FORESTRY for March containing Dr. Shufeldt's very excellent article on Woodchucks and Porcupines and even though I am not well acquainted with the habits of either of these animals, the peculiarities which are described proved of great interest to me."

DR. PHILIP SKRAINKA.

"The Forest Guides Movement will be a success. You have done much to help it along."

SOLAN L. PARKES.

"Permit me to say that your idea of planting a tree from each State in the Union in front of your building in Washington is original and highly commendable. I congratulate your Association on the beautiful thought which you are planning to make effective."

MARTIN V. CALVIN.

"I am enjoying the magazine very much. The last number, with its article on the woodchuck and porcupine, by Dr. Shufeldt, was of particular interest to me."

DR. L. D. POWERS.

"I am delighted to renew my subscription. Keep up the good work."

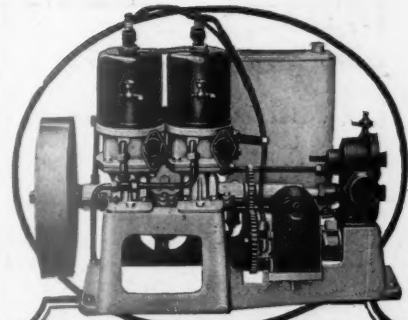
CHAPIN JONES.

"It is a great work that your Association is doing and I am proud to help my little bit toward this service, and wish to assure you that no magazine comes into my home with a warmer welcome than the AMERICAN FORESTRY Magazine."

S. W. CROWELL.

"Your efforts to have the popular choice for the National Tree are very interesting and instructive."

GRACE RAYMOND OTIS.



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USED by the Canadian Government and the Canadian Pacific Railway. Will throw water to a height of 172 feet. Shipment complete, ready to run. Can be quickly moved to any endangered section by auto, pack horses or boat. Write for Bulletin H-7012.

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Forest Ranger Course, of high school grade, covering two years of five months each.

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ANIMAL INGENUITY OF TODAY

By C. A. EALAND, M.A. The author's love of nature is shown on every page. He describes the skill, clever devices, and stratagems of birds, reptiles, insects, and other forms of animal life—how they order their lives, and protect themselves. The world of nature is a real wonderland, and Mr. Ealand the best sort of a guide through it. Profusely illustrated.....\$2.25

FORESTRY TRAINING

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Four and five-year undergraduate courses and a two-year graduate course in technical forestry, leading to the degrees of Bachelor of Science in Forestry and Master of Forestry.

Forestry teaching in spring and fall at Manitou Forest (a 7,000-acre forest belonging to the School) and the winter term at Colorado Springs.

Write for announcement giving full information.

LOGGING IN SWAMPS

A NEW five-ton Franklin-Bullock tractor, equipped with a powerful all-steel winch, making it adaptable for all logging purposes, has just been produced by the Franklin Tractor Company. The tractor, which is of the crawler type and capable of working on any sort of ground, can be used for skidding and loading and can also provide power for hauling. These outfits have been used successfully in many different sections of the country where the variety of work has made it possible for them to prove equally effective in mountains, swamps, and sand. The economy of operation, through the use of this method of logging, makes possible a great saving. As a ground skidder, the tractor can easily handle logs scaling as high as 2,000 feet board measure. It has a working radius of 700 feet from the mast tree. Logs



THE NEW TRACTOR CAN BE USED FOR SKIDDING AND LOADING, AND IS CAPABLE OF WORKING ON ANY TYPE OF GROUND

can be assembled, cut into desired lengths, and piled on the landing ready for loading without the use of a single team. Not only are the expenses of drivers' wages and team maintenance eliminated, but an increased output is secured as well. Another outstanding feature of the Franklin tractor is its mobility. Practically no time is lost in moving from one setting to another. This makes it possible to assemble logs at relatively small costs at places easily accessible to trucks, wagons, or teams. As a loader the new tractor can be used with an ordinary jammer or a mast and boom. When the tractor is used for skidding or loading, none of the tractive parts are in operation. Logging men who have been accustomed to have their tractors run to each individual log as it lies in the woods can easily realize what this saving of wear means. By having the tractor remain in the stationary position and using a line for hauling in the log, depreciation, which is always a big item in the cost of operation, is virtually eliminated. The accompanying photograph

shows a Franklin-Bullock at work in a Southern swamp. Here 800 feet of line was used and with the tractor a proper distance from the mast tree a 700 foot haul was possible. While at this setting, the tractor hauled in a log 76 feet long and three feet in diameter at the large end. During the same day, several trees more than 90 feet long were brought in without difficulty. An interesting feature of this operation was that the owners of the timber were reclaiming trees formerly abandoned because of their inaccessibility. Several concerns who have heretofore been unable to bring out valuable trees because of swamps are planning to use outfits similar to this one to cut down the waste of their timber.

MORE PECANS

THE latest report on pecans shows the finest crop of record, considering the United States as a whole, the promise being for 89 per cent of a full crop. Last year 27 per cent of a full crop was realized. An unusual fact is that this year the promise is from good to excellent in practically all portions of the belt. The quality of the nuts is 88 compared to 73 last year.

The development of the pecan industry during the past 10 years has been remarkable. A ready market has developed for the improved varieties. Vast quantities of pecans were formerly allowed to waste in the forests, or were gathered only by the hogs, but the wild crop is now much more closely gathered and increasing attention is being given to the native groves. Immense plantings of improved pecan trees in the Southeastern States are coming rapidly into bearing, and the orchards that have been conducted on sound business principles are proving a profitable investment.

SQUIRRELS PLANT BLACK WALNUT GROVES

BOUNCING along the fence rail like a bit of animated thistledown, he manages to convey the impression that he hasn't a serious thought in his head, and few would suspect that the squirrel is the chap who supplied the American Army with the wood for its gunstocks, though he didn't mean to do it of course. He was looking after his own food supply, saving the resources of summer against the famine of winter, but incidentally he placed a big deposit to man's account in Nature's savings bank.

The Forest Service, United States Department of Agriculture, is authority for the statement that the squirrel, through his habit of burying nuts, has been the most important agent in the reproduction of the black walnut groves. The timber from the groves planted years ago by the squirrels satisfied an important need during the war when walnut was used to make gunstocks and airplane propellers.

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